ELECTRI 21

The Electrical Contracting Foundation
The power...of the future.

Surviving Utility Deregulation

Prepared by:

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Energy Services for the Millennium

ELECTRI 21

SURVIVING UTILITY DEREGULATION

By Lewis Tagliaferre, C-E-C Group

"The largest industry in America is about to come apart. Almost since the days of Thomas Edison, this nation has acquired its electricity from regulated monopoly utilities. These companies now reach into every home in America; send out annual bills equal to more than $800 for every man, woman, and child; run thousands of coal, nuclear, gas, and hydroelectric power plants; and manage thousands of miles of transmission lines in vast regional "grids" that must be synchronized 60 times per second."

"The system is largely up for grabs. There is a great deal of momentum for restructuring it, accompanied by an equal amount of uncertainty about how to keep the whole system operating and how to meet the public goals. The consequences of such a change are staggering, and so, naturally, a number of private interests are spending vast resources to influence this restructuring."

"Dozens of critical questions remain unanswered. There are few other arenas where competent public interest advocates can accomplish so much--and, conversely, few other arenas where so much can be lost so quickly if public interests are not ably represented."

EXECUTIVE SUMMARY

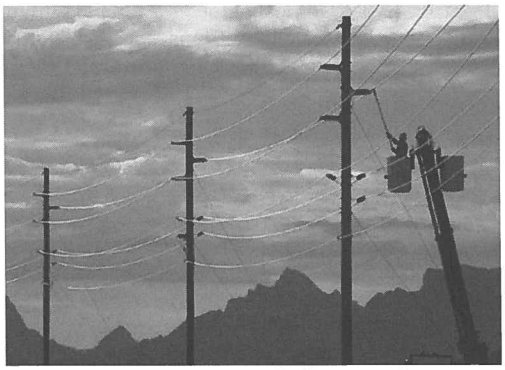
INTRODUCTION

The goals of this project are to:

1. Compile examples of competitive strategies of unregulated utility affiliates,
2. Isolate specific options contractors may consider in planning strategic responses, and
3. Compile an education kit with presentation aids disclosing findings of the project.

The deliverable materials include on-line resources that contractors can use to keep up with developments. Supplemental educational resources for more in-depth review are included in a separate volume. They include class leader resources and a syllabus for conducting a half-day seminar in the field.

The emphasis in this project has been on unregulated operations of investor-owned utilities, although it is acknowledged that municipal power companies and rural electric comparatives are also stakeholders in deregulation. But, they are governed by special federal and state laws that are beyond the scope of this project. The focus here is on the unregulated new business being stimulated by the Energy Policy and Conservation Act of 1992. (PL. 102 486)



Optional strategies for contractors were prioritized after collecting opinions of several groups, and pilot testing the implementation plan in an ongoing project with the Washington, D.C. chapter of NECA. The findings also help identify areas where further projects may be organized by industry associations for contractors without sufficient resources to accomplish strategies that are daunting. Throughout the project duration, daily news about utility restructuring was collected and distributed to affected NECA chapters.

TABLE OF CONTENTS

The findings, opinions, conclusions, and recommendations provided herein are based on independent research, conducted under the auspices of a grant from The Electrical Contracting Foundation's Center for Research Excellence. Information in this publication should not be regarded as an endorsement of the Foundation or its parent organization, the National Electrical Contractors Association.

This report has been made possible through the generosity of the electrical contractors and corporate members of The Electrical Contracting Foundation.

Restructuring Investor-Owned Utilities

Electric utilities all over the country are being required by state lawmakers to make alternative sources of power and services available to customers. At mid-1999, 21 states had passed legislation and three others had issued regulations phasing in competition among energy services providers. (See Figure 1)

The traditional vertically integrated companies including power generation, transmission, and distribution are being separated into three separate lines of business. Generation is exempted from the Public Utility Holding Companies Act, transmission is regulated by the Federal Energy Regulatory Commission, and distribution is regulated by the states. In addition, they are setting up unregulated operations in three main categories. These are Power Marketing, Telecom/Internet and related lines, and Energy Services Contracting. The latter includes services traditionally provided by mechanical/electrical contractors. For a generalized organization chart see Figure 2. As one contractor noted, "we must either partner with them, subcontract to them, or learn to compete with them."

These changes are being driven by Federal and

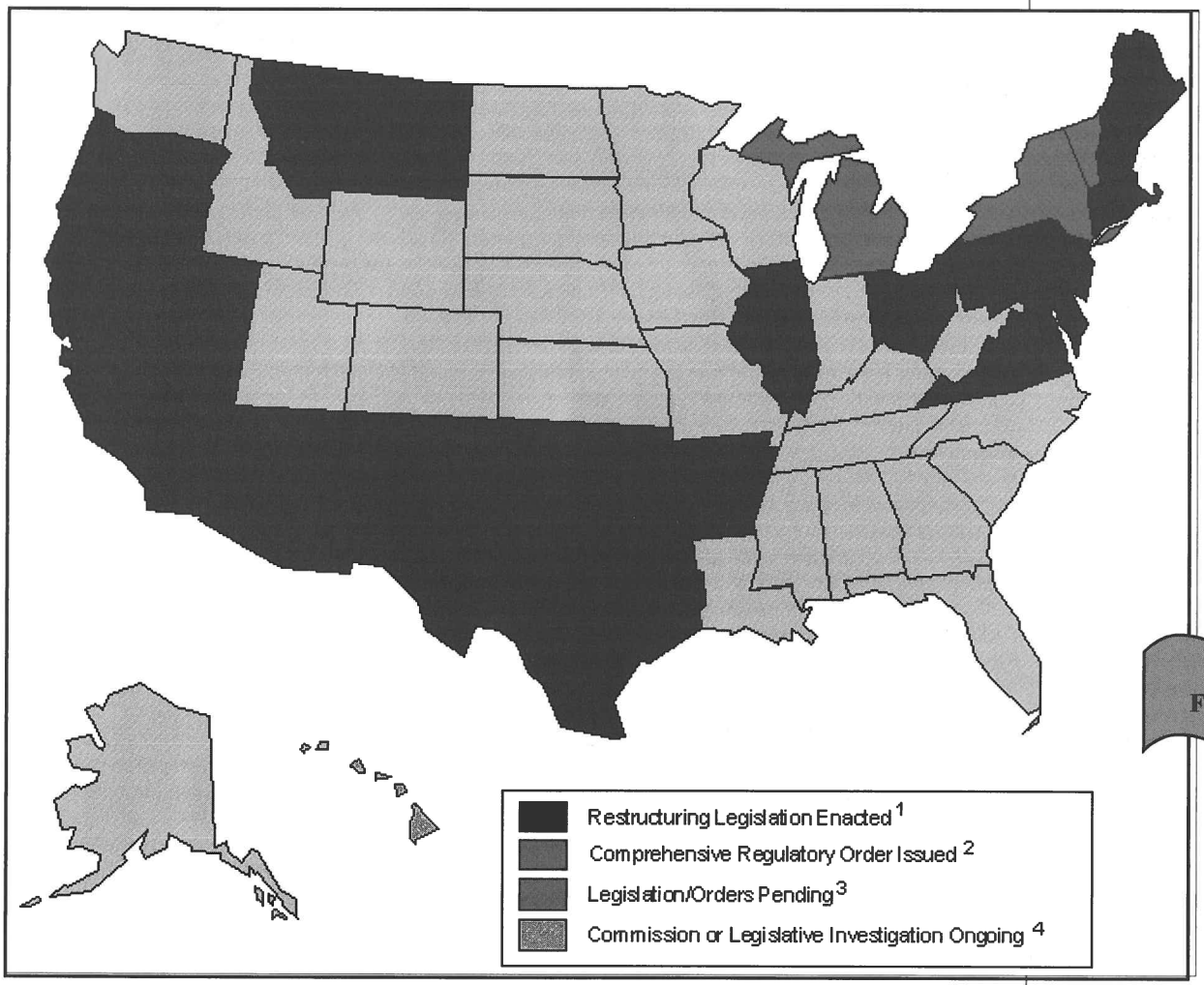


Figure 1

What electrical contractors must understand simply is this. Competition among investor-owned utilities is reducing the assured profits from monopoly franchises they had for electric power. Utility executives must somehow make up that loss for their stockholders. They are setting up unregulated services they can provide nationwide, and expanding their territories through horizontal mergers. Some of them are incorporating work done traditionally by electrical/mechanical contractors and bundling it with competitive energy services. They can do the work either by subcontracting it or by growing their own organizations, or by acquiring contractors. Contractors must develop a competitive response or risk the loss of a significant share of their markets.

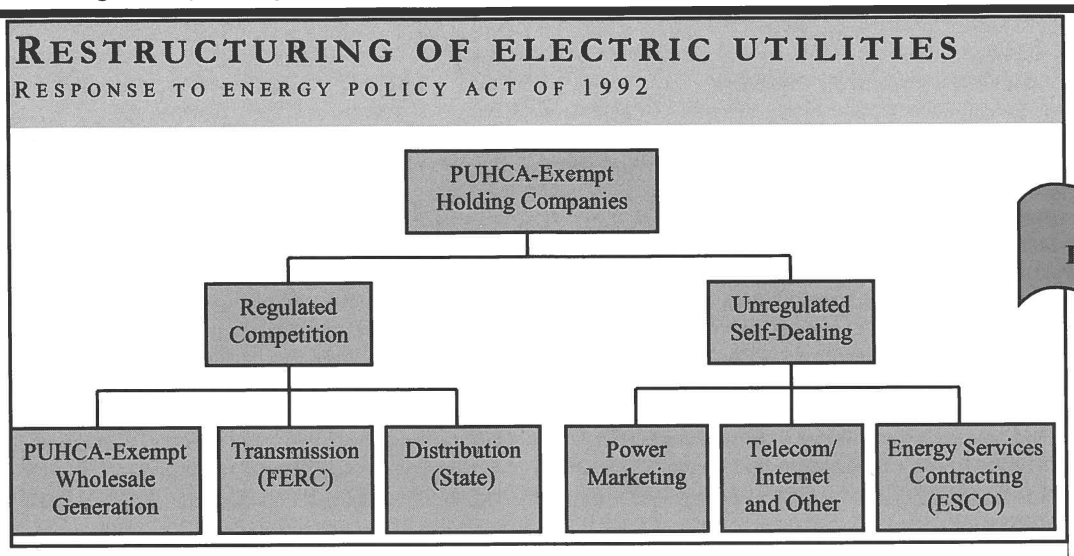


Figure 2

state policies in response to organized efforts by consumer groups and large energy users to obtain the benefits of more competition. Measurable results attributed to increased competition in previously deregulated industries such as trucking, banking, telecommunications, and air lines have included:

- economic growth
- accelerated technology
- increasing employment
- more consumer options
- and arguably, lower prices (1)

Some readers may dispute these benefits of previous deregulation, but the trend toward enabling more consumer choice is now irreversible. The basic goal of electric industry restructuring is not only reducing prices, but also enlarging consumer choices and stimulating creative, innovative new energy services. The primary factors driving the push toward electric industry restructuring include the following positions:

- wide spread perception that power is available on the national market at prices well below imbedded costs of many utilities -
- large regional and inter-utility variations in prices should no longer be permitted due to costs of prior investments, contractual obligations, regional differences in fuel costs, purchase power obligations, taxes, labor costs, environmental factors, and regulatory decisions -
- exposing monopoly utilities to competitive forces would produce cost reductions and produce additional consumer benefits through market innovations and technological improvements -
- members of the rapidly growing independent power marketing industry should be permitted to aggressively pursue their ability to sell power directly to consumers -
- the history of previously deregulated monopoly industries stimulates political momentum to include the electric industry, although critics of deregulation may disagree.

Competition is reducing the profits in power generation for some utility companies, forcing their executives to reconsider their corporate strategies. They have three simultaneous challenges: 1) offer new services to existing customers to prevent them from choosing competitors, 2) expand their business in unregulated markets to compensate for lower profits from electric power sales lost to competitors, 3) enlarge their territories through mergers that expand their potential profits through larger economies of scale.

The most common response of utilities has been to transfer assets to a holding company and organize operations into separate regulated and unregulated wholly owned subsidiaries. The motivation for forming a holding company is perhaps best explained in the statement published by Constellation Energy on its home page at http://www.constellationenergy.com after it was formed from the Baltimore Gas & Electric Company in April 1999. See Figure 3. (Org. Chart)

"BGE's traditional regulated business of providing electricity and natural gas to customers in its service territory is being opened to competition. Partially in response to this competitive environment, BGE has increased its unregulated, energy-related business.

"However, under Maryland public utility law, BGE cannot raise capital for its unregulated businesses. Since we anticipate that in the future the capital needs of the unregulated businesses will be greater than that of BGE, the holding company

"Competition is reducing the profits in power generation for some utility companies, forcing their executives to reconsider their corporate strategies"

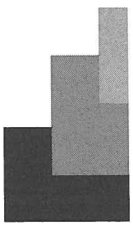
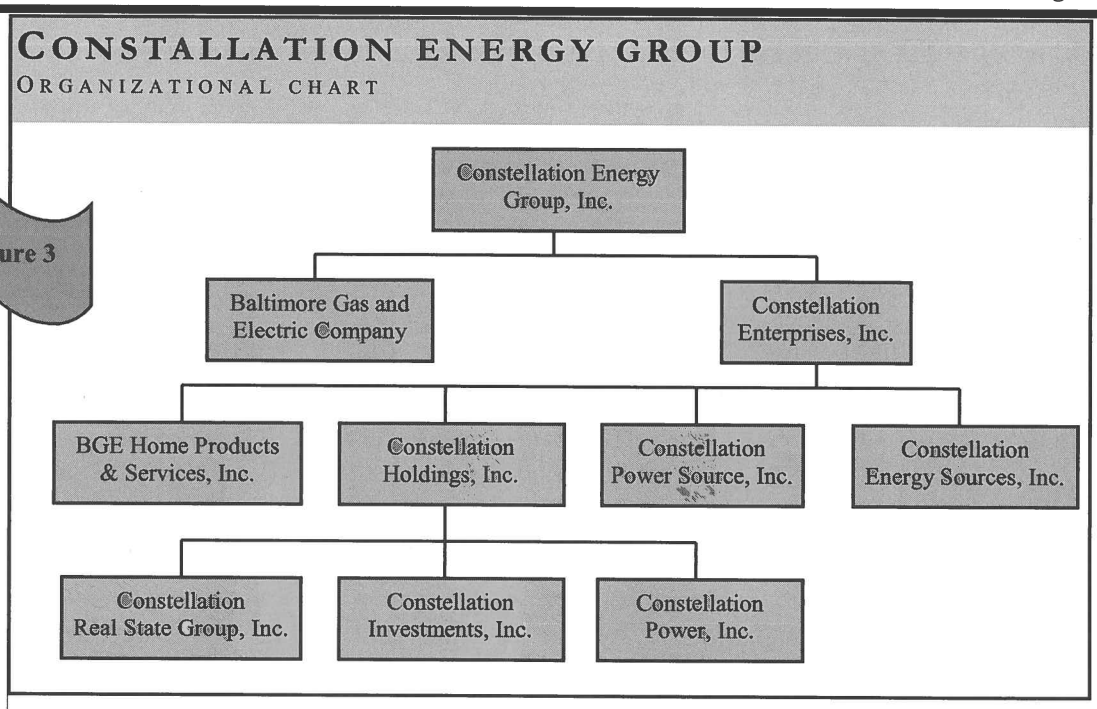


Figure 3



structure will separate the operation of the regulated business from the unregulated businesses, allowing Constellation Energy Group to raise capital for its unregulated businesses in the public markets, which is more efficient and cost effective. In addition, the capital structure of each unregulated business may be tailored to suit its individual business. These factors will enhance Constellation Energy Group's competitiveness.

"The EMS total market generated revenue of $23.3 billion in the United States and Canada in 1998"

"A holding company structure is common for companies engaged in multiple lines of business and is preferred by the investment community because it is easier to analyze and value individual lines of business. A holding company structure also makes it easier for regulators to assure that there is no cross-subsidization of costs or transfer of business risk from unregulated to regulated lines of business. Finally, a holding company structure provides the regulated utility legal protection from the results of unregulated business activities." (http:// www.constellationenergy.com/about/about6.htm)

The unregulated utility subsidiaries commonly operate as energy services companies (ESCO), or power marketing firms. Sometimes also called energy services providers (ESPs) or competitive services providers (CSPs) these are a new breed of companies emerging to take advantage of opportunities created by restructuring of the energy industry. Their common goal as unregulated utility affiliated companies is to help users make and implement cost-effective decisions about their energy needs. These companies typically perform the following energy management services, according to the description provided by an industry trade directory available on the World Wide Web site at http://www.espio.com:

- study energy use patterns and suggest ways that customers can reduce wasted energy and lower operations and maintenance costs;
- help customers select and install energy efficient equipment;
- provide equipment financing options, as well as maintaining and operating equipment at owners' facilities;
- offer advice about how to best purchase energy; and
- analyze and offer the most cost-effective combination of these services.

According to a report by Frost & Sullivan (www.frost.com), "North American Non_Residential Energy Management Services Markets," the EMS total market generated revenue of $23.3 billion in the United States and Canada in 1998. These revenues represent all beyond the meter energy services, including performance contracting, energy audits, equipment sales for energy management purposes and project management. (It excludes energy-efficiency retrofits.) Industry participants generating this revenue include several different types of competitors, such as energy service companies (ESCOs), energy service providers (ESPs), contractors, consultants, and facility management companies. Deregulation of the electric utility industry and continued advances in technology are anticipated to push EMS revenues higher, toward a predicted $43 billion by 2005.

Examples of Competitive Strategies of Unregulated Utility Affiliates

This section provides descriptions of unregulated activities being conducted by a group of utility holding companies selected from the vast number of such cases compiled for this study by searching daily news of such operations on the Internet. These items illustrate the diversity and creative innovations being tested by utility holding companies searching for ways of meeting the demands of increasing competition.

Baltimore Gas & Electric was integrated into Constellation Energy and contracted with Convergys Corporation to operate telemarketing call centers and sell the services of its BGE Home subsidiary. BGE Home provides installation, repair and sales of all major brands of appliances, HVAC systems, home improvements, and commercial building systems. Energy services contracting is provided by another unregulated subsidiary, Constellation Energy Source, Inc. The Internet home page is located at http://www.constellationenergy.com.

PG&E Energy Services of California signed national accounts for power and performance contracts with Safeway and Vons grocers, Blockbuster video rentals, ARCO gas stations, and Rite Aid pharmacies. PG&E Energy Services contracted with GroupMAC , a national roll-up company, for onsite mechanical/electrical work in 56 cities nationwide through an exclusive partnership. See the home page of PGE Services at http://www.pges.com.

Kansas City Power and Light invested $50 million in the independent Nationwide Electric, Inc., organized specifically to acquire electrical contractors into a national roll-up company. UtiliCorp United reported taking an equity position worth $185 million in roll-up Quanta Services in exchange for convertible preferred stock. (Other large non-utility roll-up national mechanical/electrical firms include EMCOR and Integrated Electrical Services, Inc.)

A utility company that typifies the integrated approach to unregulated business operations is Conectiv, Inc., formed from the merger of Delmarva Power and Atlantic Energy. You can see the Conectiv services offerings at its web site, http://www.conectiv.com. In addition to selling power and gas at retail, Conectiv also offers the following unregulated services normally provided by contractors:

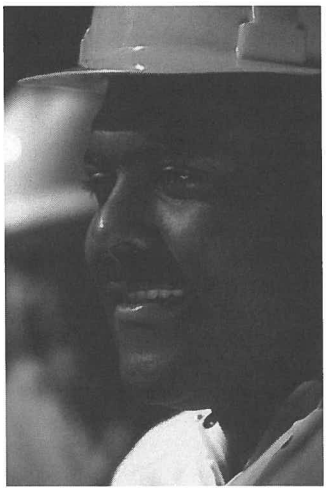
> *Back-up power generation, design and construction services, intelligent energy systems, facilities maintenance, indoor lighting, outdoor lighting, on-site energy audits, power quality services, transformer and substation maintenance, plus local and long distance telephone services.*

Under its unregulated power marketer, PP&L EnergyPlus of Pennsylvania is offering competitive energy prices to groups of public and private schools, churches, municipalities, libraries, hospitals, fire companies, and business owners throughout the four-county central region of PA. Included are other money-saving proposals such as lighting improvements, energy management, consolidated billing, and HVAC maintenance services. PP&L EnergyPlus has signed an impressive list of customers across the state. Here are a few:

> Nine state agencies of the Commonwealth, including 14 universities in the system of higher learning, energy purchasing organizations representing more than half the state's school districts and several municipalities, the PA Chamber of Commerce with 5,800 member business firms, and the Graphic Arts Association of Philadelphia with 300-plus members. (Home page located at http://www.pplresources.com)

FirstEnergy Services Corp. has acquired several electrical/mechanical contracting companies during the last 18 months, and more are planned. The Hattenbach Company of Cleveland, OH was the last firm added to Colonial Mechanical Corp. of Richmond, VA, Edwards Electrical & Mechanical Inc. of Indianapolis, IN, Elliott-Lewis Corp. of Philadelphia, PA, Roth Bros, Inc. of Youngstown, OH and RPC Mechanical, Inc. and Spectrum Control Systems, both of Cincinnati, OH. Of the latest acquisition, FirstEnergy VP Kathryn W. Dindo said, "The Hattanbach Company will be a solid strategic fit for FirstEnergy as we expand our business in other areas of the Midwest and the northeastern portion of the U.S." Together the seven companies produce more than $315 million in annual revenues with more than 2,100 employees. Home page is http://www.firstenergycorp.com.

Exelon Infrastructure Services, Inc. (EIS) announced the acquisition of five leading utility service contracting companies as it seeks to become "the nation's leading provider of network distribution infrastructure services." EIS, an unregulated subsidiary of PECO Energy Company (NYSE: PE) in Philadelphia, said, "the acquisitions represent the first step toward establishing a national network of contractors to serve the distributed infrastructure needs of electric, gas, telecommunications, cable and water utilities throughout the U. S." The five acquired companies, serving utilities in 37 states, have a combined work force of more than 4,400 and annual revenues of nearly $300 million. EIS also is actively pursuing the acquisition of several other infrastructure service providers.



Southern California Gas and San Diego Gas & Electric Co. merged into Sempra Energy, which formed Sempra Energy Solutions as an unregulated ESCO. It acquired independent ESCO, CES/Way, and has successfully marketed performance contracts nationwide. Possibly its most public project was relighting the Statue of Liberty at no cost to tax payers through a performance contract funded with energy savings from more efficient products. Home page is http://www.sempraenergy.com.

Downside to Competition

Although the goals of restructuring may be desirable for the overall economy, there is a downside to competitive electric power that includes transition costs. The downside includes the following concerns:

> *consolidations that require restructuring and early retirements, the end of utility rate-based energy efficient retrofits, environmental impacts of relying upon low cost highly polluting coal/oil combustion generation, decline of system reliability, cost increases for some customers, and increasing competition for electrical/mechanical contractors.*

An undetermined portion of the market for electrical contracting is at risk because unregulated utility ESCOs can bundle power sales with contractor-like services in unregulated states. On the other hand, the vast marketing power of utilities enables them to uncover and develop entirely new markets for energy services that could benefit electrical contractors who can become involved in the energy services business. Certainly, most retrofit projects funded by performance contracts would not be possible under conventional cost/payback analysis.

Some utility ESCOs have learned that expected profits may be unrealized when they try to organize contracting operations internally. Although they are funded with the massive resources of utility holding companies, unregulated affiliates are mostly small organizations with fewer than 200 employees. Many of their executives have little or no experience in the contracting business. Nevertheless, they must deliver workers and materials on diverse ad hoc job sites regionally and nationally. That is what contractors do best.

Without established experience or infrastructure, unregulated utility affiliated ESCOs have three options for project delivery. They can: 1) become licensed contractors and go through the costly learning curve while building an internal workforce; they can; 2) acquire contractors; or they can; 3) out source the work to qualified contractors. All three options are being employed by various energy holding companies.

"Restructuring of utilities and their aggressive marketing have stimulated concern by building trades contractor groups about the potential for cross-subsidizing unregulated operations with funds generated by the regulated operations, both past and present"

Unfair Competition or Growth Market

Restructuring of utilities and their aggressive marketing have stimulated concern by building trades contractor groups about the potential for cross-subsidizing unregulated operations with funds generated by the regulated operations, both past and present. Perhaps the HVAC industry is most at risk of cross-subsidies as so much of the work involved in energy efficient retrofits is done by the mechanical trades. A most eloquent complaint on behalf of the HVAC industry was written by Richard C. Carlson, Chairman, Spectrum Economics, Inc. and published by PMA OnLine Magazine (07/98). An excerpt from his paper follows:

> ".. early experience with deregulation has demonstrated that there are several substantial, unexpected problems. One such problem is the cross-subsidization of utility affiliates in unregulated service industries which threatens to undermine competition in these service industries as well as to reduce cost savings to consumers of electricity. The current pattern of electric deregulation creates strong economic incentives for such cross-subsidized market entry.
>
> " Cross-subsidization occurs when an affiliate in an unregulated market is able to price its product or services below cost due to its relationship with a regulated entity. Whether this cross-subsidy takes the form of covering the affiliates losses with revenues from the regulated utility or arises from the use of assets of the regulated entity to reduce the cost of providing service, the unregulated affiliate enjoys a competitive advantage due to its relationship with the regulated monopoly. This internal subsidy is borne, directly or indirectly, by the consumers of the regulated entity."

NECA cosponsors the National Alliance for Fair Competition. NAFC represents 10 national small business trade associations with a combined membership of over 35,000 firms. It is seeking new federal legislation that would help assure small business owners the ability to compete with utility operations by restricting their ability to benefit from noncompetitive use of resources funded from captive customers. "Small businesses do not have a captive rate base onto which they can shift the costs of doing business" said NAFC Executive Director Tony Ponticelli. "Utilities are very adept at shifting the costs of their unregulated, non-utility services back to the regulated utility operations providing their unregulated businesses an

enormous, and unfair, competitive advantage. Not only does this (cost shifting) destroy competition, it serves to keep rates high and harms consumers as well," explained Ponticelli.

NAFC believes that Congress must enact federal legislation because the existing antitrust laws do not protect small businesses in existing, mature markets from utility subsidized competition. "The states need direction and guidance in crafting uniform, fair and adequate rules of conduct which apply to all unregulated utility affiliates, regardless of the type of business in which they are engaged," added Ponticelli. This is why NAFC believes Congress must act.

Contractors are rightly concerned about the market power of incumbent utilities to use their resources and information in unfair competition. State public utility commissions have been reluctant to address non-utility activity of holding companies unless real and direct harm to rate payers is proven. Utility defense includes the right to compete with normal practices, even though they may prove harmful to a competitor. Indeed, the states do not extend regulatory authority over the unregulated subsidiaries to the public utility commissions under current law.

How can state regulators assure that parent company financial resources will not be used to cross subsidize unregulated operations in competition with established customer services infrastructure? A policy study conducted for EEI by a leading economic research firm concludes that efficient competition requires that cross subsidization be prevented. The EEI study concluded that price cap regulation curtails cross subsidy and cost-shifting incentives. However, it stated (paraphrased) that:

> "Policy makers must recognize that cost-shifting and cross subsidization are distinct, having different implications, and that price cap regulation will be most effective in controlling cross subsidies and reducing cost-shifting concerns."

> "Largely because of its superior efficiency and innovation incentives, price caps have become the dominant form of regulation in the telecom industry. This experience is instructive because the telecommunications industry has had to cope with cross subsidization and competitive market issues more extensively than electric utilities. Policy makers should heed this experience as they design rules for restructured power markets. A useful alternative within the traditional cost-of-service rate making process is to use cost separation and allocation mechanisms which can guard against cross subsidization."

Utility competitors object to any favored treatment of the incumbent utilities that would inhibit their ability to compete. So most states have recognized the issue and made some policy that requires incumbent utilities to isolate and separately account for all costs of unregulated operations. But, they still have the ability to use their vast resources to finance new business ventures.

On balance, it may be that electrical industry restructuring is creating more opportunities than threats for electrical contractors as a whole. Although utility affiliates may offer new services that many contractors are unable to provide, such as engineering and financing performance contracts, contractors ultimately may benefit from new technologies and economic growth fostered by utility competition.

Additionally, contractors are not without market power. The common need of all ESCOs is profitably managing labor and materials on the job site. They have very little experience and virtually no infrastructure for meeting this need. Contractors do, and they can use their market position to profit from the new energy services business. However, they will need to see ESCOs as potential customers rather than competitors. And, they will need to consider expanding the range of services they offer to customers who are looking for one-stop shopping for all their future energy services needs.

SUMMARY OF OPTIONAL STRATEGIC RESPONSES

Optional strategies available to electrical contractors were developed from surveys of customer groups and ESCOs by C-E-C Group reported by "Electrical Contractor" magazine. (December 1998). That work was extended in this project through several mail surveys and industry focus groups. Contractor participants in this study ranked the optional strategies in the order of their potential value to electrical contractors as follows:

1. Contractors should reorganize to stimulate innovations and creativity and so help identify niche markets they may service profitably that are not being met by unregulated utility affiliates.

2. Contractors should develop information sources and keep themselves and their employees continually informed about the new energy services paradigm.

2. (Weighted Scores: 7.2) Contractors should develop information sources and keep themselves and their employees continually informed about the new energy services industry paradigm.

Respondent Rankings: (Customers - 5.4)
Task Force - 3, NECA Pres. - 3, Wash. DC - 3, IEC, Inc. Leaders -2, ElectricWest - 3

Discussion - The restructuring situation changes daily, making it difficult for contractors to keep up with the threats and opportunities. But, it is an essential function of management to be well informed about these developments. In addition to reading news and case histories about industry restructuring in the trade magazines for electrical contractors, they also can find numerous information resources on the Internet. (Note: As with all published sources, information on the Internet must be confirmed before relying on it for business decisions.) A few Internet sites require a paid subscription, but access to most Internet sites is absolutely free.

In addition to reading the trade press publications, someone in the office can be assigned to check free Internet news sources daily and compile copies of the relevant information for the CEO and the company planning group. Contractors who do not yet have Internet access through a local area service provider should immediately consider getting a subscription that provides unlimited time online. In addition, contractors should check the available information provided by their associations, both through printed materials and electronic sites on the Internet. Typical is the site of NECA, Inc. at http://www.necanet.org, and that of "Electrical Contractor" magazine at http://www.ecmag.com.

Contractors who do not have office staff sufficiently for this task might consider employing student interns part time to keep up with the industry developments and print out news summaries for management review and decision making. High school and college students interested in marketing maybe found by contacting a local coordinator of the DECA program in schools and colleges. (Home page at http://www.deca.org.) There may also be family members not employed full time by the firm who could be recruited for this assignment. And, of course, contractors should look to the chapter offices of their associations to keep them informed of restructuring events occurring in the chapter jurisdiction.

INFORMATION RESOURCES.

Trade Publications:

Electrical Contractor Magazine NECA
www.ecmag.com

Electrical World Magazine The McGraw Hill Companies
www.electricalworld.com

Energy User News' Magazine Cahners Business Information
www.energyusernews.com

PMA Online Magazine Power Marketers Association
www.retailenergy.com

Selected List of Internet Home Pages:

Associations

www.powermarketers.com (provides free daily news)
www.epsa.com
www.ei.org
www.egsa.org
www.necanet.org
www.ec.org
www.appanet.org
www.nreca.org
www.naesco.org
www.energymarketers.com
www.cubr.org

News Sources:

www.espio.com (profiles of energy service providers)
www.energycentral.com (daily news)
www.energyusernews.com (periodical)
resdata.com (analysis of market trends)
www.energyinfosource.com (free)

States

www.statescape.com
www.state.xx.us
www.naruc.org/stateweb.html
www.eia.doe.gov/cneaf/electricity/chg_str/regmap.html

Federal:

www.ferc.fed.us/electric/electric2.htm
www.eren.doe.gov/femp/

Energy Services Holding Companies - (Examples):

www.magicnet.net/~metzler/index.html (industry directory)
www.conectiv.com
www.selectenergy.com
www.constellationenergy.com
www.pges.com
www.pplresresources.com
www.pepco-services.com
www.newenergy.com
www.firstenergycorp.com
www.enteritage.com

On line Competition Sites:

www.utility.com
www.energy.com
www.energyguide.com
www.energymarketplace.com
www.utilityguide.com
www.electrichoice.com
www.energydepot.com
www.scanaonline.com
www.chooseenergy.com

3. (Weighted Score: 7.2) Contractors should pre-emptively encourage loyal customers to stipulate their firms as the preferred subcontractor to any ESCO making an energy services proposal.

Respondent Rankings: (Customers - 4.9)
Task Force - 4, NECA Pres. - 1, Wash. DC - 2, IEC, Inc. Leaders -3, ElectricWest - 4

Discussion - Aggressive utility affiliates have targeted key metro centers for marketing operations. Without them knowing it, some contractors may find their loyal customers are wooed by unregulated utility affiliates, whether the state is deregulated or not. You can identify ESCO office locations and company profiles with a subscription to http://www.espio.com or from the Internet home page of their association at www.naesco.org. Daily news about such project awards is presented free on the site at www.powermarketers.com.

Loyal customers should be informed of possible hits from ESCO marketers so that incumbent contractors may be recommended for any energy retrofit projects that might be proposed by ESCOs. However, decisions of this nature often are made at executive levels higher than the contacts normally maintained by contractors. So it may be necessary for contractors to increase their penetration of the executive suites in order to be referred to competitive ESCOs for subcontracts.

Ideally, loyalty to the incumbent contractor should be so strong that any ESCO would be ordered by the customer to subcontract any energy services project to the incumbent electrical contractor on a sole-source negotiated basis. Additionally, national chains should be able to depend upon their local area contractors to create partnerships with contractors in other locations to service building needs nationwide. So it is important for contractors to overcome any reluctance or anxiety about assuming responsibility for projects beyond their normal trade jurisdictions.

However, the second best option would be for the customer to direct the ESCO to obtain bids from several local qualified contractors before providing the labor and materials itself. Since there is not likely to be any state law requiring this procedure, it will be necessary to convince the customer that this arrangement is best in the long run, even though it might lengthen the procurement cycle and even cost more at the outset. Because, after the ESCO completes the project, the customer may then need to rely on local area contractors for long range support as usual.

As quoted in "Electrical Contractor," Lewis Tagliaferre, Proprietor of C-E-C Group, suggests that contractors should: "Become a deregulation resource for your customers. Find out what's going on in your state, and how changes will affect your customers' business, their energy rates, and their futures. Go to your customers and say, "If an ESCO should hit on you, give us a call and we'd be glad to help you make the appropriate decisions, and to support those decisions. –this way, you'll have a history of giving good advice and information to your customer, and you will be more likely to get a call from that customer when the contracting needs to be out sourced."

That is what happened when All Saints Hospital in Fort Worth, TX contracted with CES/Way International, Inc. (acquired by Sempra Energy Solutions) for a performance contract retrofit and brought in Alladin Electrical Services Co. to bid on the job. ("Electrical Contractor," Aug. 1999, pp. 101-104.)

Of course, in order to gain such exceptional customer loyalty your firm and all your employees must deliver exceptional service. If there is any doubt that your customers are discontented with your service now is the time to improve the behavior, appearance, and performance of all your employees to assure that you will at least be invited to bid on any energy projects awarded to ESCO firms. If such customer service training is needed, contact your association leaders to enroll your people in any courses that are offered, or to suggest development of them if needed.

A first step is to begin a regular customer satisfaction assessment on all your projects to be sure your reputation is better than that of any possible ESCO competitor. The goal should be continuous striving for zero-defect customer satisfaction. For further guidance on increasing customer satisfaction, refer to the Foundation project titled, "Customer Satisfaction Models for Electrical Contractors," Index No.F9801.

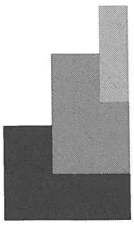
4. (Weighted Score: 7.0) Contractors should position their firms as out source partners with ESCOs.

Respondent Rankings: (Customers - 5.1)
Task Force - 2, NECA Pres. - 2, Wash. DC - 4, IEC, Inc. Leaders -5, ElectricWest -2

Discussion - All unregulated utility-affiliated ESCOs must efficiently place labor and materials at diverse job sites in scattered locations. Moreover, they must do this in competition with other ESCOs and the established infrastructure of existing contractors, many of whom enjoy high customer loyalty. Because of the costly learning curve and the labor issues involved, some of them have tried to organize internal work forces and then disbanded them when expected profit goals were not met. So, it is natural for them to consider either acquiring successful electrical/mechanical contractors or out sourcing the work to established firms in the local area.

For partnering with a contracting partner to be the

"Aggressive utility affiliates have targeted key metro centers for marketing operations"



preferred option, confidence in quality workmanship and management skills of local area contractors must be assured. The obligation for making this case is, as usual, on the seller. So, contractors wishing to grow through electric industry restructuring may consider identifying the ESCOs operating in their areas and convincing them that partnering with them is the best option. Company profiles of ESCOs and their field offices are listed at http://www.espio.com. Members of their association are listed and described at www.naesco.org.

A wonderful example of this strategy is given by news that Duquesne Light will offer Home Services in conjunction with Brite House Electricians, an affiliate of Sargent Electric Company. Duquesne Light and Sargent Electric have been working together for more than 30 years. The companies frequently exchange technical knowledge and training and have teamed together on previous projects, such as installation of Duquesne Light's advanced metering system.

Duquesne Light is introducing the Home Services program in response to the new business environment that has emerged in the deregulated electric market, according to Ed Finamore, general manager, Business Development and Metering Technology at Duquesne Light. "Home Services was created to address the needs of our customers," Finamore said. "Research has indicated that customers desire in-home wiring repair services and trust Duquesne Light's recommendations and technical expertise." Duquesne Light Home Services offers an extensive array of home electrical repair and installation services -- from large jobs, such as the rewiring of houses and safety inspections, to small jobs, such as the installation of ceiling fans, switches and outlets. "The combination of Duquesne Light's 120 years of wiring and customer service experience and Brite House's expertise in home repairs creates an unparalleled resource for home owners to call upon for all of their electrical needs," said Greg Toth, Vice President and General Manager, Brite House Electricians.

As Tagliaferre of C-E-C Group was quoted by "Electrical Contractor," "Become familiar with the ESCOs operating in your area. Go to these companies and say, 'If you want this work, you're placing yourselves into the position of having to put labor and materials on job sites. That's something we know how to do, and we can help you.' This will position contractors for collaborating with the marketing-savvy ESCO." (Aug. 1999, pp. 104.)

Trade associations, such as NECA and IECI, can adjust their priorities to include more institutional promotion to ESCOs of the benefits in out sourcing with their members. Indeed, NECA has been doing just that, but more efforts to coordinate national trade association advertising with local sales promotion efforts by chapters and members would be useful. Associations may also consider offering training in the negotiation and construction of partnering agreements.

5. (Weighted Score: 4.8) Contractors should organize statewide lobbies to assure adequate legislative representation during state deregulation deliberations and subsequent rule making.

Respondent Rankings: (Customers - 2.6)
Task Force - 6, NECA Pres. - 5, Wash. DC - 5, IEC, Inc. Leaders -4, ElectricWest -6

Discussion - Knowledge about the restructuring process in each state is crucial to constructing a strategic response. After state laws are enacted, the drama shifts to the public utility regulatory body that must write enabling rules for competitive operations.

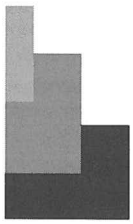
State Deregulation Political Issues

Source: Research Institute for Small & Emerging Business, XENERGY Consulting, Inc.,1998
Customer Choice Schedule
Stranded Cost Recovery
Mandatory Rate Reduction
Default and Standard Offer Generation Service
Customer Load Aggregation
Metering, Billing, and Load Profiling
Supply Reliability
Price Volatility
Customer Education and Consumer Protection
Competitive Systems Transition Charges and Tax Implications
Unfair Marketing Power of Incumbent Utilities
Financial Cross Subsidization

How can all the stakeholders in a state, including electrical/mechanical contractors, be motivated to take an active role in state deliberations before final enactment of legislation and implementing regulations that may be harmful to their interest? Consumers often are represented by consumer advocates, but most small business contractors have neither the time nor the skilled resources to actively participate in the state deregulation process. It is up to their representative organizations, such as NECA and IEC, to stimulate the interest and support needed to adequately staff competent counsel and participation in state deliberations as soon as they emerge. NECA cosponsor the Alliance For Fair Competition, an organization that supports contractor interests at the state levels.

Some states wonder if they should deregulate electric utilities at all. States with utility rates lower than the national median of 6.92 cents per kilowatt-hour have a stake in keeping the present system in place, because deregulation might actually cause price increases. So a group of 23 states

"Knowledge about the restructuring process in each state is crucial to constructing a strategic response"



with lower rates formed the Low Cost Electricity State Initiative (LCESI) to lobby Congress for the right to choose whether or not they will join the crowd and open all consumer classes to competition. The LCESI seeks to: publicize the importance of preserving low rates for native customers, shelter rural electric rates from price increases in a competitive market, raise awareness of "negative stranded costs" and protect states rights to allocate such costs, and ensure that economic advantages of low-cost states are not eroded by restructuring.

Their worry is that utilities currently serving low-cost states would begin selling their power in higher cost areas at rates higher than they charge in their native areas, but still lower than the higher cost suppliers. Then rates to native customers might rise to that common level. Higher rates would be harmful to rural customers that have benefitted from low-cost hydro and coal fired supplies. The stranded cost issue works in reverse of high cost states where utilities have been successful in getting price adjustments to cover payback of noncompetitive generation facilities. In low-cost states, the market value of generation plants might be higher than book value, and that could be money in the bank for native consumers that could be lost under a federal mandate. So, through its lobbying efforts the LCESI wants to assure that an "opt out" clause is included in any federal legislation being considered to mandate state deregulation.

As deregulation events occur continually, it will be useful to download the current version of state developments that is updated monthly. It is available, along with detailed state-by-state legislative summaries, from the U.S. Department of Energy's web site at:

http://www.eia.doe.gov/cneaf/electricity/chg_str/regmap.html

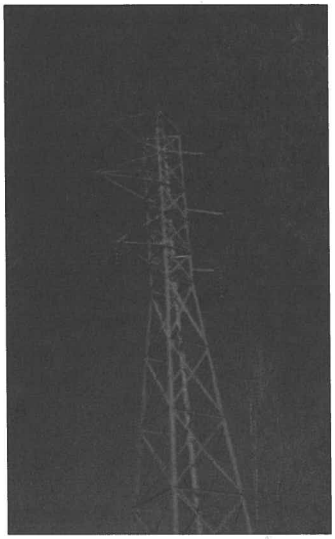
The ideal situation would be for the states to incorporate a model code of business practice, such as that issued by NECA, to prevent incumbent utilities from using their financial power and brand name to restrict competition or cross-subsidize the organization and operations of any unregulated affiliated subsidiaries. The principal goals would include prohibition of cost shifting from unregulated to regulated operations, preventing cross subsidies, and eliminating use of utility market power to unfairly restrict competition or harm the established contractor infrastructure.

6. (Weighted Score: 4.4) Contractors should position their firms to offer energy management and mechanical trades work along with electrical services.

Respondent Rankings: (Customers - 5.5)
Task Force - 5, NECA Pres. - 6, Wash. DC - 6, IEC, Inc. Leaders -6, ElectricWest -5

Discussion - This strategic option, as all the others, is suggested by customers who responded to the *EC Magazine* survey. Depending on the state, from 50 to 72% of customer respondents agreed with the proposition that, "Electrical contractors should offer energy management and mechanical services with their electrical services."

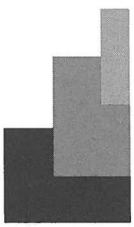
Immediately after Gov. Bush signed the deregulation law in Texas, TXU (formerly Texas Utilities) offered Austin area developers a complete package including electric, gas, phone, cable, and Internet services, including construction. A TXU spokesman said, "This thing is bigger than TXU, it's bigger than Texas. What you are seeing is a global change in business strategy, not just in electric services. All of our customer surveys indicate they want a single source." Therefore, it seems logical that electrical contractors can preserve their service market position by entering some type of partnering agreement with mechanical contractors and energy engineers who can perform energy audits and make value-added design recommendations beyond their individual capabilities.



Unregulated utility affiliates are beginning to offer bundled mechanical and electrical services through acquisitions of contractors. They are setting up offices in selected metropolitan centers for energy efficiency retrofits and facility maintenance in anticipation of future deregulation of retail power. See, for example, the world wide web site of Conectiv Energy at http://www.conectiv.com or the new services offered by PGE Services at http://www.pges.com. Or, review the complete list of energy services providers available through subscription at http://www.espio.com. Or check the home pages of your local area incumbent utilities to see what they are promoting in your market area.

The leading company taking this position probably is Group Maintenance America Corp. (NYSE: MAK), a leading national provider of mechanical and electrical services. It has significantly enhanced its national service capability by linking its information network to The Cadence Network (TM), a web-based system operated by Cadence, a leading facility cost-reduction company. The alliance reaches all fifty states across thousands of locations. GroupMAC will be able to provide its national account customers with timely information on maintenance, repair, and replacement costs for their energy consuming assets, by site and by individual piece of equipment, via The Cadence Network(TM) web-based system.

Chief Executive Officer, J. Patrick Millinor Jr., stated, "This relationship represents how we are leading the way in expanding service to national accounts. We have not lost one national accounts customer since beginning our program in early 1998 while adding over 5,000 new customer sites



for which we provide a variety of our core services. We believe the addition of this program will be well received in the national account market and creates a position from which we can continue to build momentum in expanding our national services into new market sectors. Partnering with Cadence has allowed us to uniquely combine our core services with their energy information and cost reduction services, bringing unprecedented value to national customers."

Additional GroupMAC information and press releases are available on GroupMAC's website at http://www.groupmac.com. For additional information regarding Group Maintenance America Corp. via fax, at no cost, dial 1-800-PRO-INFO and enter "MAK".

Some contractors may find ways of joining together to organize a new combined electrical/mechanical contracting company, or they may organize partnerships with energy engineers and mechanical contractors. Energy engineers may be found among members of the Association of Energy Engineers. Home page is http://www.aeecenter.org. Either the electrical or the mechanical contractor in the partnership could bring customer proposals to the team for a combined response. Such projects grow from the needs of commercial/industrial customers to continually assess their energy consumption patterns and reduce their costs whenever possible.

"The power of national brand names is also being used by utility energy services marketers to gain national customer recognition and establish consumer preference"

Trade associations could provide a useful service by working up case studies of such successful partnerships and publishing them in periodicals and management education materials. They could also train members on how to analyze customer electric bills, perform energy audits, and specify energy efficiency retrofits.

A comprehensive, practical self study energy management manual is published by NECA titled, "Energy For the Year 2000" (Index No. IN2096). It would make a useful companion to this report, and is recommended for use in the leaders guide for field training seminars.

<u>7. (Weighted Score: 2.4) Contractors should consider forming a national brand-name roll-up type organization to market competitive energy and integrated mechanical/electrical services.</u>

Respondent Rankings: (Customers - 4.3)
Task Force - 8, NECA Pres. -9, Wash. DC - 7, IEC, Inc. Leaders -7, ElectricWest -7

<u>Discussion</u> - A study of consumer buying patterns during the pilot test period of deregulation in Pennsylvania was conducted by The C Three Group of Atlanta, GA. It reported that competition was intensive, with one estimate of total consumer advertising in the Philadelphia metro area during the campaign placed at $16million. Media used included direct mail, newspaper ads, and radio and tv ads. Of twelve competitors analyzed, the two energy services providers who got the largest share of market were PECO Energy (42.3%) and Conectiv Energy (18.6%). Thus, these two firms gained a total of 60.9% of market.

PECO was cited by The C Three Group as most successful primarily because it was the well-known incumbent supplier and had little in negative performance attached to its brand name. Consumers attributed such phrases to PECO as, "they're always there", "I've had them for 30 years", "reliable, good service", and "same as always." These comments illustrate the difficulty any out-of-state competitor has in overcoming the established position of the incumbent utility. Nevertheless, Conectiv garnered the second largest share, although it is a new brand name and never had done business in the Philadelphia area before. Consumers who chose Conectiv gave such reasons as, "more competent than anyone", "service is good", and "they offer other services."

The summary of this result by The C Three Group bears quoting here directly:

> "It is not a secret that brand names carry with them a positive or negative value. One important role of a brand name is to provide uncertain customers with an assurance that they know what they are getting. As marketing people will tell you, a customer must first be aware of a brand before they can choose it. The main finding (of the PA study) is that the local utility brand name carried significantly more weight than competing brand names. It should not be surprising that in the highly uncertain context of the pilot, customers tended to cling to the local utility brand name. The respectable showing of Conectiv, on the other hand, shows that varied publicity and exposure to other brands may quickly draw customers away from a local brand name. Conectiv's awareness advertising, coupled with their high profile purchase of local HVAC companies (with their fleet of repainted Conectiv vans) and competitive offer brought Conectiv a significant share of (PA) customers." (3)

The power of national brand names is also being used by other utility energy services marketers to gain national customer recognition and establish consumer preference. After Sempra Energy bought independent ESCO, CES/Way the name was changed to Sempra Energy Services with this explanation: "The identity change is part of an overall effort by Sempra Energy to offer customers an integrated package of energy services under the corporate brand and strengthen name recognition of CES/Way's link with its Fortune 500 par-

ent company. During the past year, we have worked with our sister companies in the Sempra Energy family to develop comprehensive energy services programs for major customers with large-scale needs," said B.N. Tripathi, president of Sempra Energy Services. "This identity change to Sempra Energy Services helps us leverage the considerable brand equity Sempra Energy is building in the marketplace as one of North America's top energy service providers and as a company that develops the most innovative solutions for our customers."

Major reasons for organizing a national brand name firm include ability to bundle sales of power and electrical/mechanical services nationwide, as well as gain the benefit of mass purchasing and national marketing economies. E-Commerce technology could also be captured for use by such a firm. One such example is using an Internet site to make power quotations such as is presently available on the Internet by participating energy services providers in California. You can see it in action at http://www.energymarketplace.com. Energy contracts may be completed on the site at www.energyguide.com also.

This strategy for contractors probably is best accomplished through their established trade associations. Utility associations have implemented this approach. The American Public Power Association organized Hometown Connections (http://www.appanet.org) to provide an umbrella brand for its municipal utility members. Field services are delivered through a contract with Service Master, Inc. And, the National Rural Electric Cooperatives Association organized Touchstone Energy (http://www.nreca.org) for the same purpose. The mutual interest of members in the association fraternity is a positive and powerful motivator to help assure success. And, the national membership constitutes an existing network of energy services providers who can easily serve national accounts customers through networks connected with modern communications methods and information technology. Therefore, contractor associations may consider organizing a national brand name corporation that can be used to establish consumer preference in energy services for members of the group.

8. (Weighted Score: 2.2) Contractors should position their firms to bundle power sales and services with performance contracts.

Respondent Rankings: (Customers - 4.4)
Task Force - 7, NECA Pres. -8, Wash. DC - 8, IEC, Inc. Leaders -8, ElectricWest -8

Discussion - As an innovative form of business development, performance contracting has proven to be attractive to a number of ESCOs, and should not be overlooked by electrical contractors in spite of the learning curve. Performance contracts are financed through sharing the energy savings obtained from more efficient equipment and usage between the contractor and customer. The customer avoids any capital cash outlays, and the performance contractor gets a job that could not otherwise be marketed. However, the financing of such jobs requires a capital resource that unregulated utility affiliates are better qualified to tap into than are most contractors. Nevertheless, it is possible for contractors to finance such jobs with the aid of third party financial partners, if the numbers are right.

Energy savings performance contracting (ESPC) was authorized for federal projects by the Energy Policy Act of 1992 (EPAct). They were further implemented by Presidential Executive Order No. 12902 in 1994 that directed federal building managers to reduce energy consumption by 20 percent per square foot by the year 2000, and 30 percent by 2005, relative to a 1985 baseline. President Clinton revised this order in 1999. Energy savings performance contracts allow Federal agencies to contract with an energy service company (ESCO) to acquire private-sector investments for energy efficiency and renewable energy projects. The ESCO incurs all costs to design, install, finance, operate, and maintain energy systems. In return, the ESCO receives its compensation based on a share of utility and related operations and maintenance cost savings during the term of contract. This option is administered by the Federal Energy Management Program in the Department of Energy. FEMP provides guidelines to help Federal facility personnel choose a financing option. Details on the FEMP program, including a listing of qualified performance contractors, are available on the Internet at http://www.eren.doe.gov/femp/femp.html.

The benefits of federal energy performance contracts have not been overlooked by the states and commercial owners. Unregulated utility affiliates offer them with bundled energy and services in deregulated states. Additionally, ESCOs can also offer performance contracts independently of power sales in still-regulated states. This strategy links the customer to the ESCO for long periods so the relationship will be well established when the states do authorize competitive power sales. To the extent that energy retrofit work may be subcontracted to local area firms, this innovation could increase the market for electrical contracting.

To be successful as primes, contractors must be qualified to conduct energy usage audits, do future risk analysis, and propose design/build recommendations for energy efficient retrofits. In addition, long term financing must be arranged for the contracted life of the project. After installation, the facility metering must be monitored and building operations regulated to help assure the energy savings guaranteed are actually achieved.

Many contractors do not have these skills, but they can be developed through partnerships with engineering and financing companies interested in working with contractors to complete the site work.

After his experience on its first performance contract with CES/Way, Alladin Electrical Services CEO Eddie Horton said, "We see deregulation as an opportunity and not a threat. - I work with high-energy-use customers. If I could go out there and sell a total package, and realize two percent of whatever that utility bill is, I'd be fixed for life. To sell power with maintenance services as a total package -I think that's what we're going to have to do to survive." ("Electrical Contractor" Aug. 1999, pp. 104.)

Several sources for organization development are available. Both the National Association of Energy Services Companies (NAESCO) and FEMP administer certification programs for energy performance contractors. They also offer training workshops to help contractors achieve the qualifications for certification. The list of FEMP certified performance contractors is available at http://www.eren.doe.gov/femp/financing/. See http://www.naesco.org for a list of potential financial services partners, and invest in a subscription to http://www.espio.com for profiles of more than 125 energy services firms. These companies provide potential performance contracting subcontracting opportunities for electrical contractors.

"As the wave of utility deregulation sweeps across the states, many utility planners may see acquiring contractors as an expedient way of getting a foot hold in the new energy services business and to expand the image of the new brand names being created"

According to the reference titled, *Performance Contracting - Expanding Horizons* by Hansen and Weisman (The Fairmont Press, Inc. 1998), "An energy services company will inspect a building or industrial facility for energy saving opportunities, recommend energy efficiency measures, and implement those measures acceptable to the owner at no up front cost to the owner. The ESCO then guarantees that the value of energy savings will cover the cost of the capital modifications provided the price of energy does not go below a specified floor price."

However, obtaining successful financing of performance contracts requires the proposer to make some extremely risky assumptions about the future cost of energy and the cost of money, and then control the facility energy usage to assure that goals are met. This risk can be mitigated by partnering with a power marketing firm. Members of the Power Marketers Association are listed at the home page located at http://www.powermarketers.com.

Full particulars on performance contracting can be obtained in the reference book cited above available from commercial book stores. In addition, networking with established performance contractors may be accomplished by joining the National Association of Energy Services Companies (NAESCO). Associate members of NAESCO include investment bankers interested in financing performance contracts.

Bundling performance contracts with sales of electric power may seem daunting to many electrical contractors. The best alternative here may be to find a power marketer that one can feel confident with as a business partner. Even Amway, Inc. the international direct marketer of consumer products has announced plans to include energy in its portfolio, and has begun pilot marketing of gas sales in Georgia and Ohio. Power marketers may be found among the members of the Power Marketers Association at http://www.powermarketers.com.

9. (Weighted Score: 1.4) Contractors should position their firms for possible acquisition by ESCOs and roll-ups.

Respondent Rankings: (Customers - 2.4)
Task Force - 9, NECA Pres. -7, Wash. DC - 9, IEC, Inc. Leaders -9, ElectricWest -9

Discussion - As the wave of utility deregulation sweeps across the states, many utility planners may see acquiring contractors as an expedient way of getting a foot hold in the new energy services business and to expand the image of the new brand names being created. Several of them have begun to buy desirable electrical/mechanical contractors in the more attractive metro areas offering economic growth. This move obviously enables the purchasing company to deliver energy services retrofits and facility maintenance over night in areas targeted to future deregulation, in addition to those states already open for competition. Many contractors have spent a lifetime building up loyal customers, and the opportunities such relationships offers for bundling services with energy is not overlooked by utility planners.

One possible way for electrical contractors to protect their market position is to join up with others in a national organization that is bigger than any of its parts. These types of mergers among contractors are called "roll-ups" and sometimes are organized by investment bankers with connections in the stock market, or even utility companies. They include Group Maintenance America Corporation (GroupMAC) (NYSE: MAK) (http://www.groupmac.com), EMCOR Facilities Services, Inc. (NASDAQ: EMCG) (http://www.emcorgroup.com), and Nationwide Electrical, Inc. financed by Kansas City Power & Light, and Integrated Electrical Services, Inc.

The competitive advantages of roll-ups include consolidated overhead and marketing expenses, national branding, group purchasing, and technical innovations. As more such roll-ups are organized and become national marketers, local family owned contractors may feel run over by the tidal

wave of their impact before they are aware of the trend. On the other hand, being acquired by a utility affiliated ESCO could enable the firm to grow and prosper with the financial and marketing resources of the parent behind it.

It is too early to predict how far this trend in acquisitions will go or what impact it will have on the contracting industry as a whole, but contractors need to be aware of both the threats and opportunities involved in joining a national organization. The financial history of roll-ups includes some painful experiences and downright bankruptcies. Obviously, if a few unregulated affiliates acquire the top contractors in a metro area and support them with aggressive brand name marketing campaigns and financial backing, the impact could be severe for those non-allied contractors facing such competition. Or, a few contractor roll-up companies could develop a national brand preference, making it difficult for local un-allied contractors to compete.

Nationwide Electric, Inc. formed with venture capital from Kansas City Power & Light, intended to become the "biggest electrical contractor in the world," according to company publicity. According to an official spokesperson, it's strategy is to acquire large electrical contractors in fast growing metro areas, with primary focus in the SE, SW, NW, and MW areas. Revenue of "Regional Platform" candidates typically exceed $50 million and have an "outstanding market reputation." The income statement must show earnings before income taxes of 7-10%, significant employee financial incentives, and steady historical performance. They must have strong senior management willing to remain for the 3-5 year transition period, and must be positioned with substantial regional and national customers. A lesser priority are "Tuck In" purchases that may remain autonomous or be brought into the national platform. Most of its acquisitions have been union firms, but it also considers nonunion candidates.

Through its Energy Marketing Group, KeySpan Energy that operates electric and gas ventures in five mid-Atlantic states including New Jersey and New York, bought Philip Fritze and Sons, Inc. CEO Robert B. Catell said, "This transaction establishes KeySpan as a major competitor for residential, commercial, and industrial energy services in New Jersey. KeySpan will continue to invest in the Northeast (contractors) where demand for cleaner air and competitive energy services provide ample opportunities for corporate growth." The company Internet site is http://www.keyspanenergy.com.

Another option driving acquisitions is the opportunity for energy service providers to partner with roll-ups of contractors to offer on-site HVAC and electrical services. In one, Arizona Public Service has signed with Tri-City Mechanical of Phoenix, a Comfort Systems USA, Inc. company to supply comprehensive energy services throughout Arizona. Bob Boscamp, senior VP of Comfort said, "Our program with APS is a great example of how an energy provider can align with Comfort Systems to expand the market and deliver more value to commercial customers. Comfort Systems was formed in 1996 to consolidate companies in the fragmented HVAC industry. Comfort Systems now generates annual revenue of $800 million with 58 contractors located in the 48 contiguous states. More information is found at http://www.comfortsystemsusa.com.

Unfortunately, most owners of family businesses do not structure their cash flow, balance sheet, and income statement, to look good for acquisitions but, rather to minimize tax liabilities. For example, one acquirer looks for earnings before income taxes (EBIT) of 8-10%, rarely reported by most contractors. Another looks for present value of discounted future cash flow equal or better to the Dow Jones stock market index. So, positioning your firm for sale may take some advice from a financial advisor or business broker to help restructure your financial condition in order to be appear desirable.

Business broker, Michael C.O'Mara has observed that, "Rules of thumb (for valuing a business) are very hard to defend unless they make sense to buyers. - keep in mind that buyers are looking for ways to: maximize profits; minimize economic factors influencing the company; minimize risks; and capitalize on long-term customer relationships." ("Electrical Contractor" July1999, pp. 47-48)

To check up on plans by individual utilities, you may look them up on the Internet through http://www.magicnet.net/~metzler/index.html, or subscribe to an Internet news service such as http://www.energycentral.com or check the daily reports posted free of charge at http://www.powermarketers.com. To engage the services of a professional business broker to help sell your business, look for a member of the International Business Brokers Association at its home page, http://www.ibba.org.

The message is simply this: Utility companies are being restructured and electrical/mechanical contracting is being targeted as one of their options for diversification through acquisitions. Although some contractors may fear loss of autonomy and even their family name identity if acquired by a utility affiliate, some others may be ready to cash out their equity and good will for a simpler way of life or timely retirement.

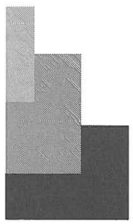
10. (*Weighted 5.9 by NECA Chapter Presidents and 6.3 by Customers*) Contractors should develop and implement more aggressive marketing efforts to help assure that buyers of energy services will rank them as preferred suppliers in the trading area.

Discussion - Many electrical contractors conduct no formal marketing communications. They rely upon referrals, word of mouth, and a group of loyal customers to meet their sales goals. Unregulated utility affiliates are not so reluctant to emphasize marketing activities to gain a large share of market quickly. During the opening period of utility competition in Pennsylvania, it was estimated that competitors invested about $16 million in media advertising, and in California the amount spent on consumer education was nearly $100 million. Obviously, if contractors cannot fund such marketing campaigns, they will need to rely upon their strengths, i.e., relationships with customers in the local trading area built upon years of trust and service. Still, some must organize a more formal approach to marketing communications than exists at present. One way to improve preference for their services is through institutional marketing campaigns funded through their national and local area trade associations or labor-management cooperative committees.

A full discourse on marketing is beyond the scope of this report, but presentation of such a course for contractors might be considered as a training service of their associations. See the discussion of "Integrated Electrical Marketing" in the reference volume on CDROM.

STEPS TO DECISION MAKING

"During the opening period of utility competition in Pennsylvania, it was estimated that competitors invested about $16 million in media advertising, and in California the amount spent on consumer education was nearly $100 million"



Utilities have enjoyed regulated monopolies for many decades. Now, they must seriously evaluate the options open to them and make the new investments needed to operate effectively in a competitive market that includes a wide variety of aggressive new players. So must electrical contractors.

In this section are presented step by step instructions for making decisions about implementing the strategies that are recommended. Suggestions also will be given for implementing those strategies that are more cost-effectively funded and administered through the services of industry associations. Prior to beginning the steps, you may wish to organize a team of people from your management group into a committee or task force to mobilize the best minds in your company for this transition to a competitive electric power industry.

Step 1. Collect all information available about the law on utility deregulation and enabling regulations issued by the utility commission in your state.

This information will be available from the state utility commission or the state capitol information office. All state PUC Internet sites are available at: http://www.naruc.org/stateweb.html. For a updated progress report on state deregulation status check the government site at: http://www.eia.doe.gov/cneaf/electricity/chg_str/regmap.html.

Step 2. Determine the ESCO companies operating in your area, including unregulated affiliates of incumbent utilities.

If your state has adopted deregulation legislation, there are probably some provisions for registering or licensing energy services providers. The list of authorized competitors is probably available from the state public utility commission or equivalent. Incumbent utilities also may be able to provide the list of authorized competitors. Contact their public relations office to check this out. Some ESCOs may be mounting marketing communications campaigns in your area. If so, they will be visible in public media publications. Also, your own customers may have been contacted by them, so asking them and your contracting friends may help identify the more active companies. You may also search the subscription web site at http://www.espio.com to locate firms with offices in your metro area.

Step 3.Contact the energy services providers operating in the area and determine their marketing programs.

Use the standard company profile form published at http://www.espio.com to collect information about each ESCO. This task may require that you or someone make several phone calls until the person with knowledge of this information about each ESCO that is active in your area is identified. If possible, obtain copies of any marketing brochures or media advertising being issued by the ESCOs. Also, identify the key managers, including the marketing director and chief project manager, or equivalent.

(Note: This step may be performed most cost effectively by chapters of contractor associations and then informing their members of the findings.)

Step 4. Prioritize your options.

Review the strategic options in the previous section and determine how you will rank them in terms of potential benefits and burdens to your company. You may use the priority ranking recommended or rearrange them in any order you prefer that will benefit your firm the best. In this

step, you will need to consider the benefit/burden ratio of each option in order to select the best ones. This process can be easily performed by using a worksheet for each strategic option, and evaluating the benefits and burdens of each one.

Write the option at the top of the sheet and divide it into two columns. List benefits of that option on the left side and burdens of that option on the right. Include all items you and your team can think of, including such factors as sales implications and all cost estimates, plus time required of your management team. Annotate each item in both columns with a number between 1-100 that reflects how you value that item. Items with higher values get higher numbers and vice versa. By totaling up the columns you will have a quantified benefit/burden ratio for each option that you analyze. Take your time with this step, and thoughts will emerge through discussion, contemplation, and imagination. Give your team permission to revise their values as new information is obtained or discussed.

Step 5. Develop a strategic plan.

Select the top strategies that you rated as most beneficial, and begin to make a plan of action. Budget for cost and time and personal assignments for each one. As this step evolves, you may gain information that requires a restructuring of the benefit/burden ratios developed above. Decide how many of the options you intend to pursue, and set goals for their timely completion. If presently employed people are not appropriately qualified, consider engaging local marketing communications firms that could help complete the chosen tasks.

Step 6. Get help, if needed.

If the tasks above seem daunting to you, consider getting help with administering this decision process. Help may be available inexpensively from a college or university faculty nearby. Some high school systems employ marketing teachers who might be helpful. Graduate students may be employed as interns for little expense. The national marketing education program known as DECA may be a source of such high school aid to gather information. Check with the principal of your local area high school to locate DECA instructors who may have students interested in working for contractors. You can locate DECA chapters at http://www.deca.org. Often college graduate students in business administration need projects to earn appropriate academic credit that this process might fulfill. Ask your association chapter manager to help in locating appropriate resources of this nature.

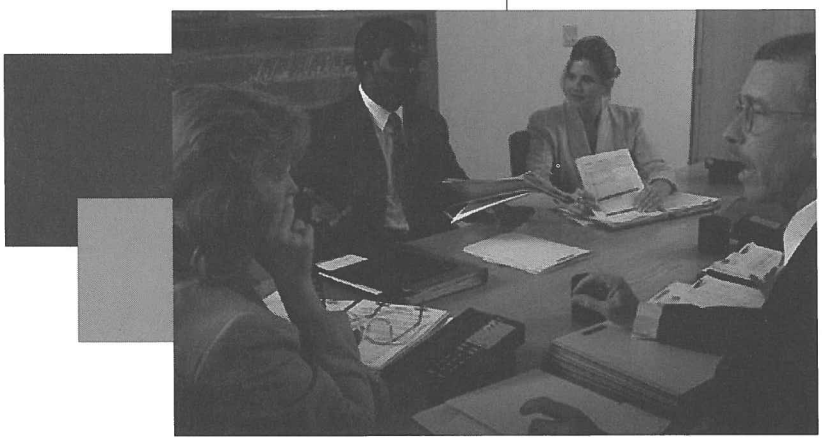
Step 7. Organize association resources.

Many of the recommended strategies can be aided by cooperative efforts through membership in industry associations. If you belong to either the National Electrical Contractors Association, or the Independent Electrical Contractors, Inc., priorities of local chapter programs may be changed to help implement some of the recommended options. As a minimum, Chapters should be a central information source for developments in their home states to meet Steps 1 and 2. In addition, they should consider a marketing communications campaign to help position their members in the emerging energy services industry.

For example, association chapters may conduct a direct mail campaign or convene a conference with ESCOs to inform them of services available from local area members, to help implement Strategy No. 3. Association chapters also might distribute marketing communications through local media to inform customer groups of the impact of utility competition, and issue information that will help build respect and preference for local area contractors to help with Strategy No.4. (An excellent example is the home page site created by NECA chapters at http://www.necaesp.org.)

Chapters might also reconsider the policy on labor relations and provide additional services that facilitate combinations of electrical/mechanical trades for increased cost effectiveness in response to Strategy No.6. Chapters might also represent their members with state governments and public utility commissions and keep their members informed of all such developments to implement Strategies No.2 and No. 5.

At the national level, associations may consider forming a new national brand name organization along the lines of Hometown Connections that was formed by APPA, or Touchstone Energy formed by NRECA as recommended by Strategy No.7. Association chapters also may arrange for speakers qualified to teach better marketing skills, or to offer consulting services in respect to power marketing, partnering, and performance contracting. A primary goal is of course helping the industry uncover and develop innovative options for new business opportunities.



ASSOCIATION CASE HISTORY

Appendix A

The metropolitan area of Washington, D.C. is challenging because the nation's capital city is bounded by both Maryland and Virginia. Both states passed laws in 1999 setting their respective schedules for phasing in consumer choice. Maryland begins consumer choice in July 2000 and Virginia markets open during a transition from 2002 to 2004. The three local area incumbent utilities and 15 other ESCOs from out of state are targeting the area with new marketing campaigns to establish a local presence prior to opening competition for power sales. The main incumbent investor-owned utility holding companies are Constellation Energy (formerly Baltimore Gas & Electric Co.), PEPCO (formerly Potomac Electric Power Co.), and Dominion Resources (formerly Virginia Power Co.).

PEPCO , through its unregulated subsidiary Pepco Energy Services, has been fairly successful in selling performance contracts, including a major long term $200 million deal with DOD for the Military District of Washington that covers over 5,000 facilities. The entire facility maintenance needs of the University of Maryland campus have been contracted to Pepco Energy Services. Virginia Electric Power Co. was folded into Dominion Resources, and Evantage, its unregulated subsidiary, has successfully marketed performance contracts from Texas to Massachusetts. Constellation Energy operates an unregulated residential business called BGE Home that focuses on installation, mantenance and support of appliances, HVAC systems, and building controls in addition to energy marketing. The unregulated ESCO industrial/ commercial company is named Constellation Energy Source. In addition to the incumbent utilities, a total of 18 unregulated ESCO companies maintain offices in the metro area of the chapter.

The largest area project awarded out of state is a national performance contract signed with PG&E Energy Services (in partnership with GroupMac) by Lockheed-Martin headquarters to support all its buildings in 26 states. PG&E also reported a partnership with Marriott's new Marketing Place headquartered here that offers energy services to the lodging industry.

The Washington, D.C. NECA chapter has organized an informal utility watchdog committee and its members are being informed in monthly meetings and through a newsletter insert distributed to the 56 chapter members. Chairman of the committee is John Honigsberg of Primary Service Corporation. In addition, the chapter supports a labor-management cooperation committee in partnership with Local Union No. 26 IBEW with the organization name of The Electrical Alliance. Chair of the LMCC is Len Bodnar of Power Concepts, Inc. Manager of the chapter is Andrew A. Porter.
Through the LMCC funding, the chapter is conducting a marketing communications campaign representing all signatory contractors as The Electric Alliance. The campaign includes radio, news paper and trade magazine, direct mail, and trade show media projects. In addition, the Joint Apprentice and Training Committee hosted an open house tour of the training facility for all area members of the Property Managers Association (PMA) and the International Facility Management Association (IFMA), general contractors, architects and engineers, and school-to-work officials.

Initial marketing support being provided by the chapter for its members include distribution of the NECA manual, "Energy For The Year 2000," printed marketing folders that help contractors communicate their experience, expertise, and credibility to customers, and a computerized presentation in Powerpoint and Presentations format combined with a printed script that will help contractors establish themselves as knowledgeable energy management partners. In its regular newsletter to members the chapter noted, " Members should be aggressively marketing themselves now so that they will be the first person customers call when faced with any energy decisions."

The Washington, D.C. chapter conducted a half-day seminar for all members that pilot tested the educational materials produced for this project. A feature of the seminar was obtaining the opinions of attendees on their value ranking of the strategies developed in this study and comparing them with the ranking of D.C. members obtained prior to the seminar. The results ranking the strategies in the same order as presented above weighted on the 10-scale follow. The greatest deviations obtained are shown for items 5 and 9. (See Figure 5)

Items	1	2	3	4	5	6	7	8	9	10
PreSem	9.0	8.6	9.4	8.2	7.4	5.4	5.0	3.8	3.2	5.9*
PostSem	6.7	5.2	5.7	6.8	1.7	5.0	3.2	3.8	0.5	6.3

*NECA Pres.Only

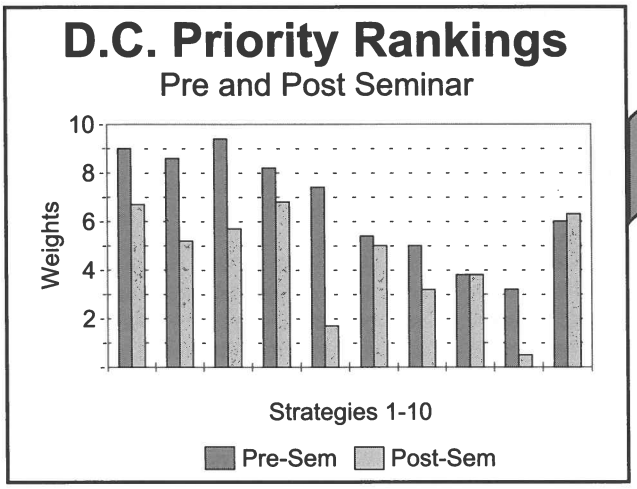


Figure 5

PRIMARY CONCERNS OF ELECTRICAL CONTRACTORS

Appendix B

This industry is composed mostly of small, private family-owned companies. The 61,414-member industry was estimated by U.S. Bureau of Census to employ 641,985 people and account for payrolls of $21.6 and business volume of $64.9 billion in 1997, the latest year for which government statistics are available. That year, the Census estimate distributes the industry establishments according to $ value of business done as follows:

Less than $99,999:	7,364
100,000-249,999:	16,304
250,000 - 499,999:	11,195
500,000 - 999,999:	8,898
1.000M - 2.499M:	6,581
2.500M - 4.999M:	2,744
5.000M - 9.999M:	1,384
More than 10M:	957

Source: 1997 Economic Census, U.S. Census Bureau, June 1999

"Electrical Contractor" magazine estimates total 1999 revenue for the industry at nearly $77 billion. It reported that the industry has been growing at a rate of 6% annually. Further, the work these employers conduct is divided almost equally between construction of new buildings and support of existing buildings. In the latter market, they perform routine maintenance as well as periodic retrofits and modernization. The technology they implement includes electrical power distribution, lighting, security, telecommunications, and control systems, among others.

It is precisely this type of work that is being targeted by many unregulated utility affiliates. How much of this contractor market is at risk depends upon the goals and strategies of specific utility holding companies. In some areas it may be slight and in others, including major metro centers, it may be significant. Some may concentrate on servicing existing buildings and others may include new building construction as well.

Federal and states laws create very few, if any, direct rights for small business competitors against unregulated utility competition, and the availability of private rights under the antitrust laws is severely limited. NECA has been giving high priority to protecting contractors from unfair competition through its support of the Alliance for Fair Competition. It makes legal resources available to chapters for support of favorable state legislation, in addition to representing contractors in federal lobbying. Utility competitors also want a level playing field and seek to minimize the market power of incumbent utilities, due to their monopoly status. Contractors are understandably concerned about developments arising from competition between unregulated utility holding company affiliates, such as described above.

The business tactics by unregulated utility affiliates that are feared most by contractors can be summarized as follows:

- *Brand-name multimedia marketing/ advertising* - When unregulated utility affiliates advertise through direct mail or public media or implement direct sales promotion using the powerful brand name of the parent utility (even with disclaimers) non-allied contractors feel helpless.

- *Bundling energy and services* - When unregulated utility affiliates are combined with energy marketing to offer integrated electrical/mechanical services and power to aggregated groups of customers and national accounts, non-allied contractors feel threatened.

- *Acquisitions* - When unregulated utility affiliates buy contractors at premiums and then underbid the lowest qualified, licensed incumbent contractor to apparently buy jobs in order to retain or acquire the long term energy business, non-allied contractors feel hopeless.

- *Long term financing* - When unregulated utility affiliates offer long term financing of performance contracts with energy efficient retrofits, non-allied contractors feel helpless.

- *Poor quality control* - Through cost cutting and pressures to compete, utility affiliates may reduce the standards of installation and quality controls below the traditional care and professionalism provided by incumbent contractors. When they see quality performance and local customer safety threatened, non-allied contractors feel fearful.

- *Excessive assets* - When non-allied contractors see the utilities investing $billions piled up through monopolized rate-payer bills, they feel overwhelmed.

- *Cross Subsidies* - When contractors perceive the above utility tactics are funded with rate payer income as a monopoly, they feel fear that is manifested in anger.

HISTORICAL BACKGROUND

Appendix C

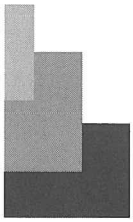
Genesis of the present situation arises from The Public Utility Regulatory Policy Act of 1978. Among other things, this federal law requires utilities to buy electric power at avoided cost rates from private "qualifying facilities" that use fuel more efficiently by using the energy from hot water and steam discarded in conventional power plants. The avoided cost rate is equivalent to what it would otherwise cost the utility to generate or purchase that power itself. This policy stimulated formation of a new group of independent power producers and exposed regulated utilities to a new form of competition for electric power called "cogeneration."

Passage of the Energy Policy and Conservation Act of 1992 (PL 102-486). EPAct) created an unregulated competitive market for wholesale power generation. It effectively decoupled generation from transmission and distribution and created a new category of Exempt Wholesale Generators (EWG). They are not classified as utilities under the Federal Power Act, and therefore are exempted from the Public Utility Holding Company Act of 1935. EWGs can generate electricity for sale at wholesale, purchase power for resale, or engage in wholesale and retail sales outside of the United States. EPAct left control of local power distribution and consumer choice up to the states, while transmission continues to be regulated by the Federal Energy Regulatory Commission. Thus, utility deregulation is more properly defined as electrical industry restructuring. The EPAct also authorized all federal agencies to negotiate a new form of "performance contract" for energy efficiency retrofits funded by sharing the energy cost savings with the contractor at no cost to the energy user. Federal building managers were required to reduce energy consumption by 20 percent per square foot by the year 2000, and 30 percent by 2005, relative to a 1985 baseline. This program was initiated in 1994 by Executive Order 12902 and President Clinton revised this policy in Executive Order 13123 in June, 1999 This program is administered by the Federal Energy Management Program (FEMP) in the Department of Energy. FEMP maintains a list of all qualified performance contractors on its Internet site at http://www.eren.doe.gov/femp.

Performance contracts have been adopted heartily by commercial energy users as a way of obtaining energy efficient building retrofits with no capital outlays. When they are combined with competitive power supplies, performance contracts have stimulated a new infrastructure of energy services business. Of major importance to contractors is the fact that EPAct does not prohibit utilities from "self-dealing," i.e., transactions between utilities and their unregulated subsidiaries. In fact, the House version, H.R. 776 banned self-dealing, while the Senate version, S.2166 allowed self-dealing when all affected State utility commissions agree in advance that such transactions are in the consumer's best interest. The Senate version prevailed in conference committee. (4)

Since 1997, Analyst Michael J. B. Carter (mcarter@resdata.com) estimated that the percentage of the U.S. electricity market open to competition has grown from about 2% to almost 20%. By mid-1999 24 states had enacted legislation scheduling some form of retail power consumer choice. By 2004 some estimators forecast that about half the U. S. population may be able to choose their energy provider, much like they presently choose a long distance telephone carrier. Several bills have been introduced in Congress to stimulate and standardize further competition for power providers throughout the states.

"Since 1997, Analyst Michael J. B. Carter (mcarter@resdata.com) estimated that the percentage of the U.S. electricity market open to competition has grown from about 2% to almost 20%"



SUMMARY

Utility deregulation by half the states has stimulated organization and growth of a new energy services industry. Utility executives used to operating a monopoly business must make difficult and risky adjustments to the competitive market place. Their main focus is on marketing and financing of new service offerings, possibly bundled with power sales in deregulated states. Further deregulation by the lagging states may require federal legislation that seems to be difficult for Congress to enact.

Business growth in energy services is concentrated in unregulated utility holding company subsidiaries. Although their strength is financial and marketing, their common challenge is profitably integrating labor and materials on diverse job sites nationwide. They can do so either by subcontracting to qualified contractors, acquiring contractors, or internal staffing.

It may take several years for the experimental unregulated business ventures to mature into a new energy services infrastructure. While the outcome is uncertain, experience indicates that contractors who keep themselves informed and respond to new opportunities as they emerge will be more likely to survive and grow through utility deregulation. Ultimately it will be the decisions of many contractors acting independently that determine the future of the industry.

The opinions collected in this study about effective responses by contractors varied over a wide range. Opinions about the most valuable strategies and appropriate responses depended on individual experience and perception that contractors held about the local situation, state by state. However, it was possible to obtain a useful ranking of possible responsive strategies from qualitative surveys of contractors and compare them to opinions of leading customer groups. Contractors who survive utility deregulation likely will implement one or more of these strategies to do so, but they may benefit from resources of their associations to help them implement the more daunting options.

GLOSSARY

One of the difficulties with discussing restructuring the electric industry is that terms mean different things to different people. To avoid some of this confusion, the following glossary is provided to clarify what the National Council on Competition in the Electric Industry means when it uses certain terms.

Access Charge -- A charge levied on a power supplied, or its customer, for access to a utility's transmission or distribution system. It is a charge for the right to send electricity over another's wires.

Aggregator -- An entity that puts together customers into a buying group for the purchase of a commodity service. The vertically integrated investor owned utility, municipal utilities and rural electric cooperatives perform this function in today's power market. Other entities such as buyer cooperatives or brokers could perform this function in a restructured power market. This is opposed to marketer which will be defined as an entity that represents different suppliers.

Avoided Cost -- The cost the utility would incur but for the existence of an independent generator or other energy service option. Avoided cost rates have been used as the power purchase price utilities offer independent suppliers.

Broker -- An agent who represents buyers and sellers of power. The agent may also aggregate customers and arrange for transmission and other ancillary services as needed. Distinguished from power marketers who own the power they sell.

Bulk Power Supply -- Term often used interchangeably with wholesale power supply. It refers to the aggregate of electric generating plants, transmission lines, and related-equipment. The term may refer to those facilities within one electric utility, or within a group of utilities in which the transmission lines are interconnected.

Buy Through -- An agreement between utility and customer to import power when the customer's service would otherwise be interrupted.

Captive Customer -- A customer who does not have realistic alternatives to buying power from the local utility, even if that customer had the legal right to buy from competitors.

Co-op -- Term commonly used for a rural electric cooperative. Rural electric cooperatives generate and purchase wholesale power, arrange for the transmission of that power, and then distribute the power to serve the demand of rural customers. Co-ops typically become involved in ancillary services such as energy conservation, load management and other demand- side management programs in order to serve their customers at least cost.

Default Provider – The company designated by state law to provide power to those customers that do not select a provider under competitive

rules of deregulation, usually the incumbent distribution company.

Deregulation -- The elimination of regulation from a previously regulated industry or sector of an industry.

Direct Access -- The ability of a retail customer to purchase commodity electricity directly from the wholesale market rather than through a local distribution utility. (See also Retail Competition)

Disaggregation -- Functional separation of the vertically integrated utility into smaller, individually owned business units (i.e., generation, dispatch/control, transmission, distribution). The terms "deintegration," "disintegration" and "delamination" are sometimes used to mean the same thing. (See also "Divestiture.")

Distributed Generation -- A distributed generation system involves small amounts of generation located on a utility's distribution system for the purpose of meeting local (substation level) peak loads and/or displacing the need to build additional (or upgrade) local distribution lines.

Distribution -- The delivery of electricity to the retail customer's home or business through low voltage distribution lines.

Distribution Utility (Disco) -- The state regulated electric utility entity that constructs and maintains the distribution wires connecting the transmission grid to the final customer. The Disco can also perform other services such as aggregating customers, purchasing power supply and transmission services for customers, billing customers and reimbursing suppliers, and offering other regulated or non-regulated energy services to retail customers. The "wires" and "customer service" functions provided by a distribution utility could be split so that two totally separate entities are used to supply these two types of distribution services.

Divestiture -- The stripping off of one utility function from the others by selling (spinning-off) or in some other way changing the ownership of the assets related to that function. Most commonly associated with spinning-off generation assets so they are no longer owned by the shareholders that own the transmission and distribution assets. (See also "Disaggregation.")

Economies of Scale -- Economies of scale exist where the industry exhibits decreasing average long-run costs with increasing size.

Electric Utility -- Any person or state agency with a monopoly franchise (including any municipality), which sells electric energy to end-use customers; this term includes the Tennessee Valley Authority, but does not include other Federal power marketing agency (from EPAct).

Energy Efficiency -- Using less energy/electricity to perform the same function. Programs designed to use electricity more efficiently -- doing the same with less. "Energy conservation" is a term which has also been used but it has the connotation of doing without in order to save energy rather than using less energy to do the same thing and so is not used as much today.

EPAct -- The Energy Policy and Conservation Act of 1992 addresses a wide variety of energy issues. The legislation creates a new class of power generators, exempt wholesale generators (EWGs), that are exempt from the provisions of the Public Utilities Holding Company Act of 1935 and grants the authority to FERC to order and condition access by eligible parties to the interconnected transmission grid. Also authorizes federal agencies to negotiate region-wide performance contracts for energy efficient retrofits funded from shared energy savings.

ESCO -- Energy Service Company. A company that offers to reduce a client's electricity consumption with the cost savings being split with the client.

Exempt Wholesale Generator (EWG) -- Created under EPAct 92, these wholesale generators are exempt from certain financial and legal restrictions stipulated in the Public Utilities Holding Company Act of 1935.

Federal Energy Regulatory Commission (FERC) -- The Federal Energy Regulatory Commission regulates the price, terms and conditions of power sold in interstate commerce and regulates the price, terms and conditions of all transmission services.

Generation Company (Genco) -- A regulated or non-regulated entity (depending upon the industry structure) that operates and maintains existing generating plants. The Genco may own the generation plants or interact with the short term market on behalf of plant owners. In the context of restructuring the market for electricity, Genco is sometimes used to describe a specialized "marketer" for the generating plants formerly owned by a vertically-integrated utility.

Generation Dispatch and Control -- Aggregating and dispatching (sending off to some location) generation from various generating facilities, providing backup and reliability services. Ancillary services include the provision of reactive power, frequency control, and load following. (Also see "Power Pool" and "Poolco" below.)

Grid -- A system of interconnected power lines and generators that is managed so that the generators are dispatched as needed to meet the requirements of the customers connected to the grid at various points. Gridco is sometimes used to iden-

tify an independent company responsible for the operation of the grid.

IOU -- An investor owned utility. A company, owned by stockholders for profit, that provides utility services. A designation used to differentiate a utility owned and operated for the benefit of shareholders from municipally owned and operated utilities and rural electric cooperatives.

IPP -- Independent Power Producer. An private entity that operates a generation facility and sells power to electric utilities for resale to retail customers. See also "exempt wholesale generator" and "distributed generation."

ISO -- Independent System Operator. A neutral operator responsible for maintaining instantaneous balance of the grid system. The ISO performs its function by controlling the dispatch of flexible plants to ensure that loads match resources available to the system.

Load Centers -- A geographical area where large amounts of power are drawn by end-users.

Marginal Cost -- In the utility context, the cost to the utility of providing the next higher (marginal) kilowatt-hour of electricity, irrespective of sunk costs.

Market-Based Price -- A price set by the mutual decisions of many buyers and sellers in a competitive market.

Municipal Utility -- A provider of utility services owned and operated by a municipal government.

Oligopoly -- A few sellers who exert market control over prices.

Options An option is a contractual agreement that gives the holder the right to buy (call option) or sell (put option) a fixed quantity of a security or commodity (for example, a commodity or commodity futures contract), at a fixed price, within a specified period of time. May either be standardized, exchange-traded, and government regulated, or over-the-counter customized and non-regulated.

Peak Load or Peak Demand -- The electric load that corresponds to a maximum level of electric demand in a specified time period.

Performance Contract - Method of contracting for energy efficiency building retrofits that are funded by sharing cost savings between user and provider that was authorized in the Energy Policy and Conservation Act of 1992 and subsequent Presidential Executive Order No. 12902 that directed federal building managers to reduce energy consumption by 20 percent per square foot by the year 2000, and 30 percent by 2005, relative to a 1985 baseline.

Power Marketer -- An agent for generation projects who markets power on behalf of the generator. The marketer may also arrange transmission, firming or other ancillary services as needed. Though a marketer may perform many of the same functions as a broker, the difference is that a marketer represents the generator while a broker acts as a middleman.

Power Pool -- An entity established to coordinate short-term operations to maintain system stability and achieve least-cost dispatch. The dispatch provides backup supplies, short-term excess sales, reactive power support, and spinning reserve. Historically, some of these services were provided on an unpriced basis as part of the members' utility franchise obligations.

Poolco -- A specialized, centrally dispatched spot market power pool that functions as a short-term market. It establishes the short-term market clearing price and provides a system of long-term transmission compensation contracts. It is regulated to provide open access, comparable service and cost recovery.

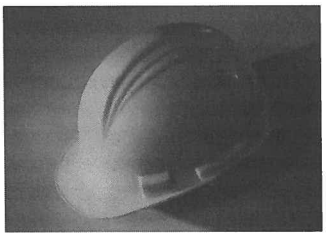
Provider of Last Resort - A legal obligation (traditionally given to utilities) to provide service to a customer where competitors have decided they do not want that customer's business.

PURPA - The Public Utility Regulatory Policy Act of 1978. Among other things, this federal legislation requires utilities to buy electric power from private "qualifying facilities," at an avoided cost rate. This avoided cost rate is equivalent to what it would have otherwise cost the utility to generate or purchase that power themselves. Utilities must further provide customers who choose to self-generate a reasonably priced back-up supply of electricity.

PUHCA -- The Public Utility Holding Company Act of 1935. This act prohibits acquisition of any wholesale or retail electric business through a holding company unless that business forms part of an integrated public utility system when combined with the utility's other electric business. The legislation also restricts ownership of an electric business by non-utility corporations.

Qualifying Facility (QF) - Under PURPA, QFs were allowed to sell their electric output to the local utility at avoided cost rates. To become a QF, the independent power supplier had to produce electricity with a specified fuel type (cogeneration or renewables), and meet certain ownership, size, and efficiency criteria established by the Federal Energy Regulatory Commission.

Real-Time Pricing -- The instantaneous pricing of electricity based on the cost of the electricity available for use at the time the electricity is demanded by the customer.



Reliability -- Electric system reliability has two components -- adequacy and security. Adequacy is the ability of the electric system to supply the aggregate electrical demand and energy requirements of the customers at all times, taking into account scheduled and unscheduled outages of system facilities. Security is the ability of the electric system to withstand sudden disturbances such as electric short circuits or unanticipated loss of system facilities.

Renewable Resources -- Renewable energy resources are naturally replenishable, but flow-limited. They are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time. Some (such as geothermal and biomass) may be stock-limited in that stocks are depleted by use, but on a time scale of decades, or perhaps centuries, they can probably be replenished. Renewable energy resources include: biomass, hydro, geothermal, solar and wind. In the future they could also include the use of ocean thermal, wave, and tidal action technologies. Utility renewable resource applications include bulk electricity generation, on-site electricity generation, distributed electricity generation, non-grid-connected generation, and demand-reduction (energy efficiency) technologies.

Restructuring -- The reconfiguration of the vertically-integrated electric utility. Restructuring usually refers to separation of the various utility functions into individually-operated and -owned entities under a corporate holding company.

Retail Competition -- A system under which more than one electric provider can sell to retail customers, and retail customers are allowed to buy from more than one provider. (See also "Direct Access")**Retail Market** -- A market in which electricity and other energy services are sold directly to the end-use customer.

Retail Wheeling -- See "Direct Access."

RTG -- A Regional Transmission Group. A voluntary organization of transmission owners, users, and other entities interested in coordinating transmission planning, expansion, operation, and use on a regional and inter-regional basis. Such groups are subject to FERC approval. See also "ISO."

Securitize -- The aggregation of contracts for the purchase of the power output from various energy projects into one pool which then offers shares for sale in the investment market. This strategy diversifies project risks from what they would be if each project were financed individually, thereby reducing the cost of financing. Fannie Mae performs such a function in the home mortgage market.

Self-Generation -- A generation facility dedicated to serving a particular retail customer, usually located on the customer's premises. The facility may either be owned directly by the retail customer or owned by a third party with a contractual arrangement to provide electricity to meet some or all of the customer's load.

Standard Rate Price – The price that states may authorize default providers to charge for power to those customers who do not select an alternate competitive supplier. See Default Provider.

Supply-Side -- Activities conducted on the utility's side of the customer meter. Activities designed to supply electric power to customers, rather than meeting load though energy efficiency measures or on-site generation on the customer side of the meter.

System Integration (of new technologies) -- The successful integration of a new technology into the electric utility system by analyzing the technology's system effects and resolving any negative impacts that might result from its broader use.

Tariff -- A document, approved by the responsible regulatory agency, listing the terms and conditions, including a schedule of prices, under which utility services will be provided.

Time-of-Use (TOU) Rates -- The pricing of electricity based on the estimated cost of electricity during a particular time block. Time-of-use rates are usually divided into three or four time blocks per twenty-four hour period (on-peak, mid-peak, off-peak and sometimes super off-peak) and by seasons of the year (summer and winter). Real-time pricing differs from TOU rates in that it is based on actual (as opposed to forecasted) prices which may fluctuate many times a day and are weather-sensitive, rather than varying with a fixed schedule.

Transmitting Utility (Transco) -- This is a federally regulated entity which owns, and may construct and maintain, wires used to transmit wholesale power. It may or may not handle the power dispatch and coordination functions. It is regulated to provide non-discriminatory connections, comparable service and cost recovery. According to EPAct, any electric utility, qualifying cogeneration facility, qualifying small power production facility, or Federal power marketing agency which owns or operates electric power transmission facilities which are used for the sale of electric energy at wholesale. (See also "Generation Dispatch & Control" and "Power Pool.")

Unbundling -- Disaggregating electric utility service into its basic components and offering each component separately for sale with separate rates for each component. For example, generation, transmission and distribution could be unbundled and offered as discrete services.

Energy Services for the Millennium

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Utility –The regulated, vertically-integrated electric company. "Transmission utility" refers to the regulated owner/operator of the transmission system only. "Distribution utility" refers to the regulated owner/operator of the distribution system which serves retail customers.

Vertical Integration -- An arrangement whereby the same company owns all the different aspects of making, selling, and delivering a product or service. In the electric industry, it refers to the historically common arrangement whereby a utility would own its own generating plants, transmission system, and distribution lines to provide all aspects of electric service.

Wheeling -- The transmission of electricity by an entity that does not own or directly use the power it is transmitting. Wholesale wheeling is used to indicate bulk transactions in the wholesale market, whereas retail wheeling allows power producers direct access to retail customers.

Wholesale Competition -- A system whereby a distributor of power has the option to buy its power from a variety of power producers, and the power producers would be able to compete to sell their power to a variety of distribution companies.

Wholesale Power Market -- The purchase and sale of electricity from generators to resellers (who sell to retail customers) along with the ancillary services needed to maintain reliability and power quality at the transmission level.

Wholesale Transmission Services -- The transmission of electric energy sold, or to be sold, at wholesale in interstate commerce (from EPAct).

Wires Charge -- Charges levied on power suppliers or their customers for the use of the transmission or distribution wires.

NOTES:

(1) Source: Economic Deregulation and Customer Choice: Lessons for the Electrical Industry, Robert Crandall, The Brookings Institution Washington, DC and Jerry Ellig, Center for Market Processes, George Mason University, Fairfax, VA 1997.

(2) Surveys were conducted among the following groups: *Foundation Task Force , NECA Chapter Presidents, members of the Washington, D.C. NECA Chatper, Chapter Leaders of the Independent Electrical Contractors, Inc., Roundtable Conference at ElectricWest '99 and members of the Washington, D.C. chapters of the Property Management Association and the International Facility Management Association.*

(3) Source: Lessons Learned From the Pennsylvania Experience, The C Three Group 1998.

(4) Source: EPAct, The Reference Addition for the Energy Policy Act of 1992, AC, Inc.

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