Industry Analysis

Of the

"Electric Utility Industry"

ECG 507, Fall 2001, Dr. Allen

Team 9

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Electric Utility Industry Analysis

Introduction

The Electric Utility Industry is classified with SIC Code 4911 and is grouped under section code 49 “Electric, gas, and sanitary services”. The electric utility industry is composed of four types of service providers: investor-owned, publicly owned, cooperative, and federal. As of the end of 2000, there were 240 industry-owned utilities, 2009 publicly owned, 894 cooperatives, and 9 federal utilities. The industry-owned utilities, however, produce nearly three-quarters of total sales to consumers at 74%, with publicly owned coming in at 15%, Co-ops at 9%, and federal at roughly 2%. This report is the result of an overall economic analysis of the industry and will detail determinants of industry profitability.

Financial Analysis

Analysis of relevant financial data reveals that over the last five years the overall profitability of the Electric Utility industry has been declining. For example, according to data taken from Standard & Poor’s Net Advantage and Energy Information Administration annual reports, the industry Return on Sales (Profit Margin %) has steadily declined from 9.0% in 1996 to 3.3% in 2000. This indicates that for each $1 of sales, profit has declined from 9.0 to 3.3 cents. Since average electric utility rates have remained relatively stable over the last decade, this indicates a steady increase on the cost side. The second key indicator is Return on Assets and again, the Electric Utility industry has declined from 6.0% to 1.7%. This decrease could suggest a decline in production efficiency, investment in lower margin ventures, or most likely, the result of “rate of return regulation” which will be described later in the industry structure section of this report. The decline in profitability has occurred while industry revenues have increased from $223B in 1996 to $440B in 2000. This increase reflected an average per-year growth of ~20% including a dramatic increase of 39% from 1999 to 2000. The primary source of this growth is the increase in non-utility income including wholesale electricity, consulting
services, natural gas and telecommunications. While electric utility revenue growth only managed a per-year average of 0.4%, non-utility growth has risen rapidly with a per-year average increase of 50%.

Comparison to 5-year S&P 500 averages obtained from MultexInvestor.COM against these key profitability indicators lend some comparison to overall economic profitability. In comparing revenue growth, the Electric Utility industry outpaces the S&P 500 average of 15.46% by approximately 4-5% at approximately 20%. Profitability ratios, however, indicate lower overall profitability for this Industry. S&P 500 companies over the last 5 years have averaged approximately 11% return on sales (net profit margin %) compared to 6-7% for this industry. S&P 500 companies also outpaced the industry’s 5-year average Return on Assets with approximately 8% compared to 4-5%. A comparison to a traditionally high profit industry further supports that this is a lower profit industry. Major drug industry 5-year averages include a 16% return on sales and a 16% return on assets.

Turning to industry participants, approximately 71 companies out of 240 generate 50% of the overall industry revenue. This grouping’s 5-year average profitability ratios are mixed with a higher Rate of Return at 8.4% (compared to industry 6%) and Return on Assets averaging 3.3% (compared to industry 4.6%). Top companies in this grouping in terms of profitability include DPL (Dayton, OH), DQE (Southwest, Pennsylvania), IDACorp (Idaho), SCANA Corp (North & South Carolina and Georgia) and Progress Energy (North Carolina & Florida). These companies have averaged a 13.5% return on revenue and a 4.2% return on assets over the last five years. Looking at the top 5 companies in terms of size, profitability is mixed – Duke Energy, Reliant Energy and TXU Corp remain above industry average at approximately 7.3% Return on Revenues and 2-4% Return on Assets. Two of the largest, PG&E (Pacific Gas) and Utilicorp (Kansas), however, have not fared as well. Utilicorp’s 5-year average return on revenue is
approximately 1.3% while PG&E averaged 4.2% during a rapid decline to 0.2% in 1999 (PG&E recently filed for bankruptcy).

Finally, two companies, DPL and Alliant Energy (Wisconsin) have made significant increase in profitability over the last 5 years. DPL’s 2000 Return on Revenues was a significant 19.8% representing an increase of 6.1 percentage points from 1996. Alliant has improved its Return on Revenue by 8 percentage points to 16.2% in 2000 since 1996.

**Demand Analysis**

The electric utility industry output over the last few years has grown very slowly. The growth of production for the industry has been 10.2% since 1996 according to data from Standard & Poor’s Net Advantage and Energy Information Administration annual reports. This is on average a 2.5% growth a year. The industry is definitely in the mature phase of its lifecycle, and industry experts expect growth to remain sluggish at a rate of 1.7 to 1.8% through 2010. For the United States, growth will move in tandem with the Gross Domestic Product (GDP), and on a more localized level it may vary more depending on the mix between businesses, industries, and local economic conditions. The industry has seen a price increase of only 13% over the last ten years, while the whole of consumer products has increased 30% over that same period of time. The economies of scale and government involvement have helped to keep prices and costs down. The only major substitute right now comes from major industrial companies that produce steam or gas as a by-product. This generation of electricity is used to bargain with the current incumbent electricity providers to obtain better prices. For residential users the substitute may be solar panels, but most other alternatives are cost prohibitive (fuel cells are one such possible alternative — but costs of installation and operation are still non-competitive with regulated electric service).
Cost Analysis

According to the Energy Information Administration report “Financial Statistics of Major US Investor Owned Electric Utilities 1996”, the major *determinants of cost* in the electric utilities industry are Operations and Maintenance expenses, Sales Expenses, Customer Service and Informational Expenses, Customer Accounts Expenses, Production Expenses, Transmission Expenses, Distribution Expenses, Fuel Expenses, Purchased Power expenses, Administration and General Expenses, Salaries and Wages, and Pensions and Benefits. Of these, Operations and Maintenance account for 57.8% of Electric Operations Revenue. Furthermore, the most expensive, variable, and uncontrollable item within the list of *operating expenses* is fuel cost. Because the utility industry is very capital intensive (power generation plants, transmission and distribution lines, etc.), the most significant *non-operating expense* is capital carrying cost (interest payments). Another report issued by the EIA, “Electricity Prices in a Competitive Environment-Marginal Cost Pricing of Generation Services and Financial Status of Electric Utilities, 1997” reports that a significant group of costs summarized in the standard utility accounting reports are difficult to classify as either *fixed or variable*. For example, Operations and Maintenance is a common category presented on financial statements. Included in this category are fuel expenses (a variable cost), boiler plant maintenance (variable cost), electric plant maintenance (variable cost), nuclear plant maintenance (a fixed cost because of Nuclear Regulatory Commission requirements), supervision and engineering costs, and general administrative costs. As a result, most of the studies used in this EIA report assume a 50/50 split between variable and fixed costs. The 1996 report referenced above mentions that a 3.7% increase in revenue in the utility industry was offset by a 5.2% increase in operating expenses, with most expenses attributed to increased operations and maintenance costs and amortization and depreciation expenses. Generally, fuel, maintenance, and sales costs increased while salary and wage expenses decreased. The decrease in salaries and wages is attributed to technological...
improvements within the industry that improved efficiencies and a trend to hire part-time or temporary employees in lieu of full-time workers. As the income statement below illustrates, such trends are expected to continue in the future - especially as the industry becomes deregulated.

**STATEMENT OF INCOME — INVESTOR-OWNED UTILITIES**

(In millions of dollars)

<table>
<thead>
<tr>
<th>ITEM</th>
<th>1998</th>
<th>1999</th>
<th>% CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total electric operating revs.*</td>
<td>296,171</td>
<td>325,591</td>
<td>9.9</td>
</tr>
<tr>
<td>Electric operating expenses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy</td>
<td>96,010</td>
<td>108,659</td>
<td>13.2</td>
</tr>
<tr>
<td>Operations &amp; maintenance</td>
<td>75,269</td>
<td>86,410</td>
<td>14.8</td>
</tr>
<tr>
<td>Depreciation &amp; amort.</td>
<td>29,227</td>
<td>30,397</td>
<td>4.0</td>
</tr>
<tr>
<td>Other operation &amp; maint.</td>
<td>35,217</td>
<td>37,917</td>
<td>7.7</td>
</tr>
<tr>
<td>Taxes (other than income)</td>
<td>14,057</td>
<td>13,565</td>
<td>(3.5)</td>
</tr>
<tr>
<td>Income taxes</td>
<td>11,478</td>
<td>12,169</td>
<td>6.0</td>
</tr>
<tr>
<td>Total oper. expenses</td>
<td>261,258</td>
<td>289,117</td>
<td>10.7</td>
</tr>
<tr>
<td>Total utility oper. income</td>
<td>34,913</td>
<td>36,473</td>
<td>4.5</td>
</tr>
<tr>
<td>Total other income</td>
<td>1,598</td>
<td>5,478</td>
<td>242.8</td>
</tr>
<tr>
<td>Income before interest charges</td>
<td>36,511</td>
<td>41,951</td>
<td>14.9</td>
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<tr>
<td>Net interest expense</td>
<td>17,498</td>
<td>18,715</td>
<td>7.0</td>
</tr>
<tr>
<td>Net income before preferred</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>distributions</td>
<td>19,013</td>
<td>23,237</td>
<td>22.2</td>
</tr>
<tr>
<td>Total preferred distributions</td>
<td>1,575</td>
<td>1,729</td>
<td>9.8</td>
</tr>
<tr>
<td>Net income on common shares</td>
<td>17,438</td>
<td>21,507</td>
<td>23.3</td>
</tr>
</tbody>
</table>

*Note: Revenues are adjusted for intra-industry sales for resale of electricity.
Source: Edison Electric Institute.

**Electric Utility Industry Structure**

The electric utility industry's structure in the United States results from its natural monopoly characteristics: it is a **regulated monopoly**. According to Pindyck and Rubinfeld a natural monopoly firm is one that can produce the entire output of a market at a cost lower than what it would be if there were several firms. Independent markets for each individual electric utility are created under "regulatory compacts" -- legal grants that give investor-owned utilities
exclusive territories, which the utility then has an obligation to serve. Further, **economic efficiency** is higher when the natural monopoly provides goods or services to the entire market instead of permitting several firms to compete. Natural monopolies exist because there are normally **large economies of scale**, and costs - both **average and marginal** - tend to decline over a full range of outputs (see the figure below).

![Natural Monopoly Costs Diagram]

One source of these scale economies in the electric utility industry is the **vertical integration** of the industry. Many members of the industry own their own coal mines for example, and the larger and larger generating plants that were built over time (since the early 1900’s) enabled the industry to drive down its costs until about 1970. Additionally, electric utilities own transmission lines, electric substations, and distribution lines. And they provide metering, billing, and customer services. All of these components of the **value chain** have traditionally been **bundled** to provide the greatest efficiency. As a result, many companies had a history of ongoing price reductions beginning in the early 1940’s and continuing until about 1970. However, the **1973 OPEC oil embargo** served as a watershed event in the history of the industry and costs began to climb. During the 1970’s and 80’s **rising average and marginal costs** for installing and operating new capacity drove prices higher. In the current economic
environment there is pressure from customers and legislators alike to *change the structure of the industry* in an effort to force prices down by introducing competition (see the section "Outlook for the Future" for more discussion on this topic).

But how are the electric industry's *consumers* protected from the *monopoly power* that each utility possesses? Both the federal and state governments get into the act. At the federal level, the Federal Energy Regulatory Commission - a division of the U.S. Department of Energy - oversees wholesale utility sales and affiliated transactions. At the state level, individual state regulatory commissions regulate the price and conditions of service to the state's citizens. The goal of regulation is to ensure that electric utility customers receive *reliable electric service* at *just and reasonable rates* (a fair price). At the same time, the regulators are charged with providing the electric utility *the opportunity to earn an adequate return* on investment so that it can attract needed capital to provide for meeting customers' needs. The diagram below from Pindyck and Rubinfeld's "Microeconomics" (Fifth Edition) illustrates the economics of price regulation.

![Price Regulation Diagram](attachment:image.png)
In a pure monopoly, the quantity produced would be $Q_m$ and price would be set at $P_m$. But to prevent consumers from paying these higher amounts and to prevent the utilities from earning "excess profits" for the industry, price is set lower at $P_1$ so that more electricity is produced and profits for each individual company are lower. Because it is difficult in practice to precisely set prices since demand and cost curves are not static, a more common method of regulation called "rate of return regulation" is used to set prices. This method is designed to produce fair prices and reliable service for consumers and equitable rates of return for the electric utilities. The illustration below from "Strategic Finance: 1998: The ABC's of the Electric Utility Industry" provides a common approach for calculating an individual utility's revenue requirement.

### Revenue Requirement Formula

<table>
<thead>
<tr>
<th>RR</th>
<th>E + D + T (r X RB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue Requirement</td>
<td>Expenses = Operating Expenses and Taxes other than Income Taxes</td>
</tr>
</tbody>
</table>

According to the Edison Electric Institute (EEI) - an industry association - investor-owned utilities accounted for more than three fourths of U. S. electric industry's sales volume. The number of firms included in this data numbers 71. With their exclusive franchise rights and their vertical integration structure for retail sales of electricity, investor owned utilities account for 99% of total revenues from "ultimate" customers since the industry provides wholesale generation to resellers such as electric membership corporations and municipalities who buy their power wholesale. Some of the larger firms (top 10 by revenue) include Duke Energy, Reliant Energy, PG&E, TXU Corporation, American Electric Power, Edison International, Xcel Energy, Southern Company, Entergy Corp., and Consolidated Edison. Market share gains by
these major companies have occurred simply because of acquisitions. Since service territories result from legal grants (the regulatory compact), the only way to expand markets in the regulated environment is to acquire additional territory by merger and acquisition. Virtually all of the firms in the top 10 have acquired other companies in recent years to expand their markets. Firms do not lose market share in the electric utility business; someone else acquires them if they are not growing themselves (it's a food chain "thing!").

**Barriers to Entry**

Early this century, social policy dictated that consumers benefited most from receiving energy services from a monopoly provider in a designated franchise area. The government restrictions put in place legally limited entry into the industry. However the notion to switch to a competitive supply is thought to be economically feasible in a growing number of utility services that once were considered to be natural monopolies. Today, the driver behind utility restructuring and deregulation is consumers that demand specialized services, greater supplier choice, and lower costs. As the vertically integrated industry is pieced apart, with processes performed by both utility and non-utility participants, investors and managers are trying to figure out what parts of this entire process—from energy production to end-user delivery—generate value. Every process in the entire energy services value chain is subject to change—and probably will change—under restructuring.

The opening of legal barriers to entry still does not change the fact that several aspects of delivering electricity are still governed by monopoly principles. Huge capital requirements, large economies of scale, and asset specific generation facilities are all still factors to overcome. However, under new legislation and rulemakings, generators of electricity, whether utilities or private producers, could market power from under-utilized facilities across state lines to other utilities. The opening of barriers to entry by deregulation will allow certain parts of the process to be available to private companies that could have the ability to provide a new level of service.
with a better price point. Considering the nature of the electric utility industry, many feel that
deregulation will naturally lead to the possible formation of conglomerates, which could control
the entire industry. The regulations must open the market to competition without accidentally
giving away too much market power. A fair, efficient competitive electric industry will not
develop if the market consolidates to a handful of giant companies, or if some companies are
allowed to engage in predatory pricing or discriminatory actions.

Nature of Competition

Considering the limited choice in power suppliers, most electric utility companies do not
have to worry about competition. However with deregulation, this so-called commodity will
have multiple companies striving to provide not only the lowest cost, but also several value
added features such as metering, billing, and customer services. For utilities to be able to
compete in a competitive market, financial managers and management accountants must make
fundamental changes in accounting methods to move the financial and business focus from
regulatory approval of spending and revenues to performance-based profitability. Some
utilities have responded to recent changes in technology and market liberalization by turning
themselves into “multi-utilities” that bundle traditionally distinct services. Recent trends in
horizontal integration of utilities offer a means of improving access and quality of utility
services. However, they might need to be subjected to closer control to guard against potential
dangers arising from less competition, greater regulatory complexity, and more concentrated
political power in the utilities.

As stated in Dick Sommers’ Viewpoint article on multi-utilities, following the trend of
horizontal integration in order to differentiate has a number of pros and cons: In principle, multi-
utilities offer several advantages. Utilities that bundle two or more services often can cut costs
through economies of scale and scope involving rights of way, physical assets, customer service
functions, project development expertise, and administrative costs. Bundling several services
together in a multi-utility may help to provide critical mass and thereby reduce the costs of investigating opportunities, developing projects, participating in bidding processes, and establishing a local presence. Multi-utilities also pose several disadvantages. Some utility services, notably power and gas, compete for the same customers in many areas. The potential for inter-fuel competition can reduce market power and thus complicate regulators’ tasks. Multi-utilities may give rise to other policy concerns related to competition. For example, an incumbent multi-utility providing telecommunications and electrical power may be able to leverage its position in the power market to enhance its market power in telecommunications, thereby deterring competitive entry. Multi-utilities pose challenges to coordinated oversight by regulators, which remain organized along industry-specific lines and located at different levels of government. Overlapping authority and uncoordinated regulation complicate regulators’ tasks and create opportunities for firms to manipulate the regulatory process.

The future of competition for utilities remains unclear; however, the potential advantages of multi-utilities include lower costs, improved customer service, enhanced competition, and expanded private investment, particularly in smaller or remote communities and in markets perceived to exhibit high risks. At the same time offsetting costs emerge in some situations. Those costs include negative impacts on competition, regulatory complications, and the concentration of political power. The future trends will definitely be adjusted according to the recent situation at Enron Corporation, a major multi-utility that recently filed for bankruptcy under Chapter 11.

Buyer and Supplier Power

The buyers for the services of the electric utility industry are broken down into three major markets: residential at 42% of revenue, commercial customers at 32.7%, and industrial customers at 20.9%. Since the industry is a monopoly, buyers in most states are tied to the supplier in their area. The industrial market has greater bargaining power than residential
customers do, since they may buy power from different sources. They bargain with the electricity provider, and then the residential customer potentially suffers higher prices as cost of service is reallocated. As the larger industrial companies bargain with the electric utility company, the companies may attempt to vertically integrate and generate their own power. Companies that produce steam or gas as a by-product are already able to do this. The residential customers are so fragmented and the capital costs are so high that this is usually not economically practical. The major suppliers to the industry are: labor and fuel suppliers: coal, gas and other renewable resources (water and wind). The market sets coal and gas prices, and the electric utilities have little influence on those prices. The electric utility industry has partially backward integrated to own coal mines as well as other natural resources to use as fuel for electricity. The labor markets are considered fragmented unless unions are involved in the state or if skills needed are scarce like nuclear engineering.

Role of Government Policies

Since 1935 the Federal government has played a significant role in regulating the electric utility industry. According to Standard and Poor’s, before the 1935 Public Utility Holding Company Act (PUHCA), three large holding companies controlled more than half of all electricity generated in the United States. The PUHCA authorized the Securities and Exchange Commission to break-up the trusts and regulate the industry. Furthermore, The Federal Power Act of 1935 created the Federal Power Commission (now the Federal Energy Regulatory Commission), which regulates the interstate transmission and sale of electric power. The energy crisis of the 1970’s created support for restructuring the regulatory framework in place since the 1930’s, and the result was The Public Utility Regulatory Policies Act (PURPA) of 1978. Under this act, the FERC was charged with developing ways to promote self-sufficiency in energy consumption. Specifically, the Commission was to find alternate means to purchasing large quantities of fuels from foreign governments and lessens US dependency on the OPEC oil cartel.
In addition to the government control and regulatory activities provided by the Federal Energy Regulatory Commission and individual state public utility commissions, Congress and the Environmental Protection Agency have enacted legislation and policies to monitor the environmental effects of the industry. According to the "Energy Information Administration" website, the Air Quality Act of 1967 allowed the Secretary of Health Education and Welfare to create air quality regions and set air quality limits across the nation. Moreover, the Clean Air Act Amendments of 1990 specifically address the acid rain problem caused by sulfur dioxide and nitrogen oxide emissions of fossil-fueled electric power plants. In fact, it is estimated that the industry's compliance costs approach more than $836 million per year. The EPA also sets Annual Emission Limits for each power generation facility, and such facilities face stiff fines and penalties if they exceed permissible limits. Finally, the Nuclear Regulatory Commission monitors operations and concerns at Nuclear Power Plants.

Electric Utility Industry Outlook for the Future

In the future, change is the watchword for the electric utility industry. A mature industry seeks to inject some growth into what otherwise will produce only 1.7 to 1.8% growth rates through 2010. Low household formation and modest growth in industrial sales will be somewhat offset by a growing number of commercial customers. And despite the negative experience in California's electricity market, deregulation is still likely to be in the industry's future. According to the John MacAyeal of Hoovers Online, the industry has already been deregulated in about half the states in U.S. But the pace of deregulation could be slowed because of the debacle in California. In addition, the recent woes of Enron Corporation are sure to cause the Congress and state legislatures to take notice: these negative experiences give pause to the powerful deregulation momentum of just a few years ago! Nevertheless, the industry has experienced a number of mergers, and companies are adjusting their business strategies to reflect the need to expand beyond traditional service territories to fuel earnings growth. Again
according to MacAyeal, over 80% of the European electricity market is already open to
competition, and some United Kingdom companies have already acquired utilities in the U.S.
(PowerGen and National Grid to name two). At the same time, several U.S. companies
including Duke Energy and TXU have expanded in Europe and Latin America.

According to Corporate Information.com, approximately 55,000 megawatts of capacity
was sold to nonutility companies during 1999 (Consider that Progress Energy's total capacity is
about 19,000 megawatts -- the tenth highest total in the U.S.). One reason for this movement is
the effort of companies to enter the deregulated wholesale power market (the FERC deregulated
these markets in 1992, allowing wholesale customers to purchase electricity at prevailing market
prices or through bilateral contracts that set the parties' own prices). The motivation for moving
into this marketplace is the prospect of earning a greater return than is allowed on the regulated
side of the industry. Some companies are constructing merchant power plants to provide
electricity for sale into the wholesale market place. All of the companies in the industry who are
pursuing this strategy are targeting rates of return above traditional allowed rates of return (for
example, 12.75% in the state of N.C.). One factor creating this drive is the competition for
capital. More and more companies are pursuing limited funds, and means are needed to make
investment in the electricity business more attractive to the investment community. According to
Scott Johnson, "Utilities that retain old accounting practices likely will face financial difficulties.
Their assets will be purchased by other entities that focus on the profitability and cash flow of
the cost objects such as customers, distribution infrastructure, and franchise territories." He
further asserts that other service providers who are able to efficiently execute operation and
maintenance activities to customers will pose a challenge to the electric industry's current
monopoly position. Johnson asserts that revenue will be earned in four ways in a competitive
environment:
1. Connecting customers to the distribution system (the network) and delivering as much energy as the customer demands.

2. Buying and selling other utility distribution systems (networks)

3. Selling and delivering other related products and services through the electric distribution channel (Progress Energy is currently developing a "Downstream Energy Strategy" that specifically targets this opportunity).

4. Leasing capacity to other companies that can use the distribution channel for other purposes (such as telephone and cable companies - CP&L has over 500,000 of these "attachments" on its infrastructure at present).

This approach follows the business model used by the telecommunications industry after it deregulated in 1996. Some of the "baby bells" have been extremely successful with it, while others have struggled significantly to achieve desired returns. Even though the industry will likely undergo significant change, the actual distribution of electricity through wires likely will remain as a regulated component of the business. This monopoly will likely go on because the economics still dictate that this method - a franchised area for one provider - yields the most favorable result for the consumer and provides the greatest economic efficiency.

Many utilities are pursuing related diversification strategies to create higher returns, but the industry has yet to demonstrate that it can successfully make this transition. Many in the industry are devoting more effort and time to identifying investments in energy-related areas that will be successful (CP&L has introduced surge protection as an additional cost service, for example). Another effect of prospective competition will be a greater focus on customers. With the advent of customer choice (not possible in monopoly!), utilities are concerning themselves with promoting increased focus on being customer centered. Technology is playing an ever-increasing role in trying to differentiate service as the industry moves toward
deregulation (for example, CP&L has performed extensive work on its website for easier customer access to information and transactional capabilities).

Another area that will continue to impact the industry is the environment -- clean air legislation dramatically affects the need for capital. *Annual emission limits* for sulfur dioxide and nitrogen oxide are becoming tougher. The required investments will continue to place pressure on prices the industry charges, and will also affect the ability to compete in the future.

A consequence of these combined forces described is movement by the utility industry to consolidate. Electric utilities are beginning to focus on becoming providers of energy, not just electricity (one example is CP&L's acquisition of North Carolina Natural Gas Company a few years ago). Companies that have combined in recent years include Dominion Resources and Consolidated Natural Gas, Duke Power and PanEnergy, Houston Industries and NorAm Energy (Reliant Energy), Texas Utilities and Ensearch (now TXU), and Portland General and Enron. According to Standard & Poor, this trend toward convergence is likely to continue.

Another trend that is likely to have significant impact on the future is the significant increase in power marketers and brokers. Wholesale power wheeling and nonutility owned generation has provided the impetus for a significant increase in the number of power marketers registered in the U.S. According to EEI, there were an estimated 705 power marketers registered at yearend 1999 -- over a four-fold increase in just four years. Enron Power has dominated this market with about 13% of the market, but events of just the last few days have turned this aspect of the business upside down!

*Future profitability* of the electric industry will be influenced by the ability of management to act wisely with respect to unfolding events. With low growth prospects in its "core business" of providing electricity, future success will depend on the industry's ability to incorporate profitable products and services that improve rates of return (including electric generation), retaining customers when choice comes to lock them in to those new products and
services, and negotiating the difficult waters that will result from increasing environmental scrutiny and a more informed using and consuming public! High barriers to entry will prevent small players from entering the business, and consolidation will reinforce the notion that only the strong will survive!

**Synthesis**

The Electric Utility industry tends to be slightly less profitable than cross-sectional industry averages such as the S&P 500. Some thoughts of what leads to lower profitability of the industry are: movement toward deregulation is transitioning the industry to a more competitive structure; the industry itself is in a mature stage; rising costs of raw energy materials and rising costs associated with controlling environmental impact are eroding profits; the product is a commodity item and with monopoly power will result in price competition instead of differentiation. Additionally, the industry presents lower investment risk than other industries, and while this fact has provided additional safety for conservative investors, it has caused returns to lag other industries. In the future, higher margin products and services will be pursued to generate better returns. In the post-restructuring competitive environment, utilities that retain old accounting practices likely will face financial difficulties. Their assets could be purchased by other entities that focus on the profitability and cash flow of cost objects such as customers, distribution infrastructure, and franchise territories. Other service providers who more efficiently perform the maintenance and operation activities needed to deliver energy to the end-user will possibly contract with asset owners and customers directly. Consequently, utility managers clearly will need different financial strategies than the current one of building assets and adhering to authorized spending levels in order to earn the authorized rate of return set by regulatory agencies.
## Appendix:

### 3 Year Electric Utility Industry Financials (Investor-Owned)

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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Total Revenue ($ millions)</td>
<td>223,937</td>
<td>261,270</td>
<td>296,171</td>
<td>315,293</td>
<td>440,821</td>
<td></td>
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<tr>
<td>Electric Utility</td>
<td>166,795</td>
<td>168,700</td>
<td>168,501</td>
<td>163,756</td>
<td>169,444</td>
<td></td>
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<tr>
<td>Resale</td>
<td>20,162</td>
<td>23,461</td>
<td>26,016</td>
<td>26,876</td>
<td>35,329</td>
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<tr>
<td>Non-electric</td>
<td>36,980</td>
<td>69,109</td>
<td>101,654</td>
<td>124,661</td>
<td>236,048</td>
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<tr>
<td>Operating Expenses</td>
<td>188,082</td>
<td>226,110</td>
<td>261,258</td>
<td>280,325</td>
<td>406,671</td>
<td></td>
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<tr>
<td>Operating Income</td>
<td>35,855</td>
<td>35,160</td>
<td>34,913</td>
<td>34,968</td>
<td>33,950</td>
<td></td>
</tr>
<tr>
<td>Net Income (Profit)</td>
<td>20,253</td>
<td>14,826</td>
<td>17,438</td>
<td>20,493</td>
<td>14,549</td>
<td></td>
</tr>
<tr>
<td>Total Assets</td>
<td>593,079</td>
<td>644,239</td>
<td>704,739</td>
<td>713,935</td>
<td>859,653</td>
<td></td>
</tr>
<tr>
<td>Total Liabilities</td>
<td>396,104</td>
<td>347,903</td>
<td>495,557</td>
<td>511,887</td>
<td>653,378</td>
<td></td>
</tr>
<tr>
<td>Equity</td>
<td>196,975</td>
<td>296,336</td>
<td>209,182</td>
<td>202,048</td>
<td>206,275</td>
<td></td>
</tr>
<tr>
<td>Return on Assets</td>
<td>6.0%</td>
<td>5.5%</td>
<td>5.0%</td>
<td>4.9%</td>
<td>1.7%</td>
<td></td>
</tr>
<tr>
<td>Return on Equity</td>
<td>10.3%</td>
<td>5.0%</td>
<td>8.3%</td>
<td>10.1%</td>
<td>7.1%</td>
<td></td>
</tr>
<tr>
<td>Return on total assets</td>
<td>4.5%</td>
<td>3.7%</td>
<td>3.8%</td>
<td>3.8%</td>
<td>3.2%</td>
<td></td>
</tr>
<tr>
<td>Operating Profit Margin Ratio</td>
<td>16.0%</td>
<td>13.5%</td>
<td>11.8%</td>
<td>11.1%</td>
<td>7.7%</td>
<td></td>
</tr>
<tr>
<td>Net Profit Margin Ratio (Return on Revenue)</td>
<td>9.0%</td>
<td>5.7%</td>
<td>5.9%</td>
<td>6.5%</td>
<td>3.3%</td>
<td></td>
</tr>
</tbody>
</table>

### Output

- Direct ('000 MWhrs): 2,342,808, 2,373,173, 2,427,733, 2,400,206, 2,437,982
- Wholesale ('000 MWhrs): 644,245, 797,207, 826,591, 545,435, 854,228
- Total Production ('000 MWhrs): 2,987,053, 3,170,380, 3,254,324, 2,945,641, 3,292,210
- Price per Kwh: 0.06, 0.05, 0.05, 0.06, 0.05
- Total Industry Output ('000 MWhrs) (all types): 4,528,988, 4,755,756, 4,903,743, 4,577,571, 5,025,789
- % of Total Output: 66.0%, 66.7%, 66.4%, 64.3%, 65.5%

Table 1: Assembled from data on Standard & Poor's Net Advantage and Electric Information Administration reports
References:


7. Hoover’s (http://www.hoovers.com/)

8. Multex Investor Online (http://www.multex.com/)

9. MorningStar Online (http://www.morningstar.com)

10. 2001 Standard & Poor's Net Advantage Industry Reports

