

NYSE: AEP



# American Electric Power

**Current Price: \$48.17**

**12-Mo. Target Price: \$43**

**Recommendation: Sell**

## Investment Rationale

AEP is one of the largest investor-owned electric public utility companies in the U.S. and ranks second in the industry in domestic generation capacity. AEP's competitive advantage lies in the strength and scale of its assets and the economies of scale that this yields. However, recent environmental regulation has had an adverse impact on AEP due to its heavy dependence on coal-powered generating plants. AEP lags its industry peers in profitability, management effectiveness, and earnings growth while operating in a sector that is highly overvalued relative to the S&P 500. These concerns, coupled with unfavorable macroeconomic conditions pose substantial downside risk to AEP over the next year.

## Summary

I have assigned AEP stock a 12-month price target of \$43 based on the following:

- ✓ AEP earnings are expected to grow at 6% over the next year, trailing the industry estimate of 9%.
- ✓ U.S. real GDP growth will slow to approximately 1% in 2008, but the economy will not enter a recession.
- ✓ The utilities industry will continue to encounter pressure from high input costs and heightened environmental regulation.
- ✓ Comparative multiples and DCF analysis indicate that the utilities sector and AEP stock are significantly overvalued and this trend will reverse in the next year.

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**Fund:** OSU SIM (BUS-FIN 824)

**Manager:** Royce West, CFA

## Stock Information:

**GICS Sector:** Utilities  
**Industry:** Electric Utilities

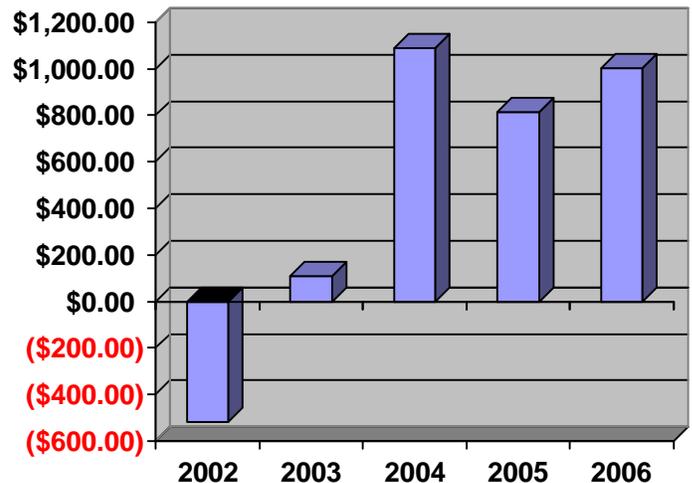
**Market Cap:** \$19.25B  
**Shares Outstanding:** 399.2M  
**Average Volume:** 2,269,590

**52-Week High:** \$51.24  
**52-Week Low:** \$40.68  
**YTD Return:** 15.8%  
**Dividend Yield:** 3.50%

**AEP 5-Year Price Movement**



**AEP 5-Year Net Income**

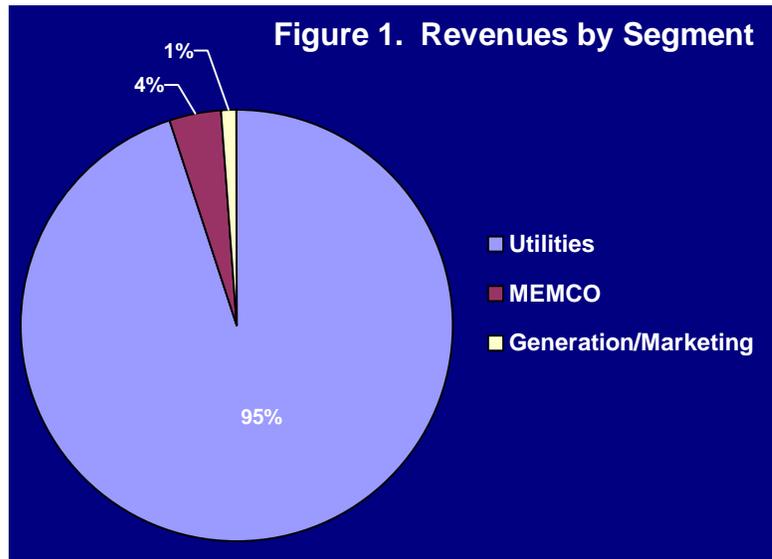


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## Company Overview<sup>1</sup>

American Electric Power Company was incorporated in 1906 in the state of New York and is headquartered in Columbus, Ohio. AEP is one of the largest investor-owned electric public utility holding companies in the United States. AEP's primary business segment is utility operations which include the



generation, transmission, and distribution of electricity for sale to retail and wholesale customers in the U.S. AEP's second business segment consists of the MEMCO Barge Line subsidiary, which is engaged in the transportation of coal and dry bulk commodities. AEP's final business segment is the generation and marketing segment which includes wind farms and risk management activities. **Figure 1** provides a breakdown of the percentage of revenues by each business segment.

## Utilities Operations

Utility operations constitute most of AEP's business operations. Utility operations include the generation, transmission, and distribution of electric power to retail customers as well as the supplying and marketing of electric power to other electric utility companies, municipalities and other market participants. AEP provides electric utility services to over 5 million retail customers in 11 states, with a total area of 197,500 square miles and a total generating capacity of over 38,000 megawatts. AEP is the industry leader based upon the number of miles of distribution and transmission lines. As a whole, the utility segment accounted for 95% of total revenues in 2006.

<sup>1</sup> Adapted from AEP 10-K and S&P

## **MEMCO Operations**

The MEMCO Barge Line transports approximately 34 million tons of coal and dry bulk commodities primarily on the Ohio, Illinois and Lower Mississippi rivers. This vertical integration into transportation resources provides AEP with information to help maximize its merchant operations' effectiveness. In addition to transporting coal for its own plants, AEP barges move a wide variety of commodities for many other customers. Approximately 35% of the barging operations relates to the transportation of coal, 28% relates to agricultural products, 21% relates to steel and 16% relates to other commodities. MEMCO operations include approximately 2,038 barges, 37 towboats and 10 harbor boats that are either owned or leased.

## **Generation & Marketing**

The generation and marketing segment consists of independent power producers, wind farms, and risk management activities within the Electric Reliability Council of Texas (ERCOT). AEP enters into short and long-term transactions to buy or sell capacity, energy, and ancillary services primarily in the ERCOT market. This small segment is highly fragmented and accounts for less than 1% of total revenues.

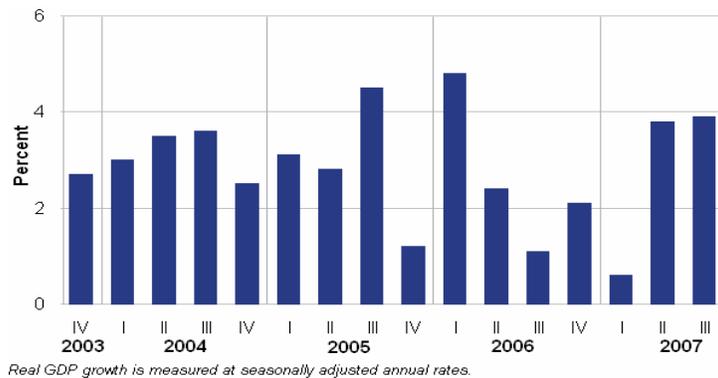
## **Sector Analysis**

AEP is part of the utilities sector, a sector that is comprised of a number of sub-sectors. These sub-sectors include water utilities, gas utilities, electric utilities, diversified utilities, and foreign utilities. Utility stocks such as AEP have historically been the quintessential safe stock due to their stable earnings, monopolistic operating environment, and large dividend payments. However, recent turmoil in the credit and equity markets warrants a brief review of the macroeconomic factors that affect the utilities sector and how these factors might shape the sector in the future.

## Macroeconomic Factors<sup>2</sup>

**U.S. economic growth** drives commercial and residential demand for a broad range of utilities and as such, utilities stand to benefit from a steady increase in the output of U.S. goods and services. Measures for the most recent quarter indicate that real GDP

**Figure 2. Quarter-to-Quarter Growth in Real GDP**

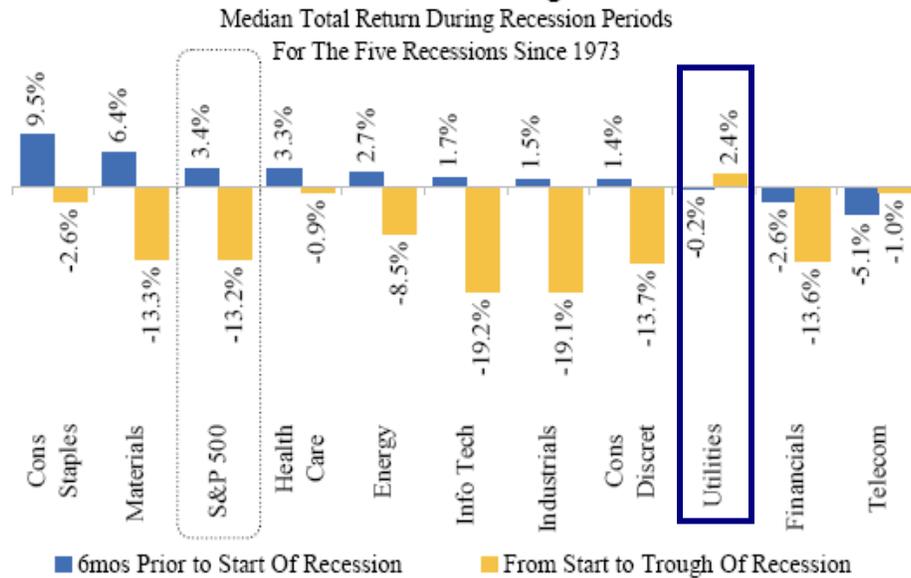


grew at an annual rate of 3.9% as shown in **Figure 2**. However, a depreciating dollar, tightening credit conditions, and a downturn in the housing sector are hampering economic growth. Real GDP growth will likely weaken further in 2008 and fall to approximately 1.2% in 2008. In addition, the risk of a recession is becoming increasingly likely with some economists assigning a probability of a recession at 40%. In light of this, it is important to note that the corresponding decrease in utility demand will likely be small in magnitude compared with the decrease in consumer demand in many other economic sectors. In fact, utilities are relatively insulated from downturns in the economy due to the fact that power and water are considered essential by many consumers. For this reason, electric utility stocks are considered a classic example of counter-cyclical investments, or investments that are not correlated with the overall economy. Furthermore, for the past five recessions in the U.S. economy, the utilities sector is the only sector to exhibit positive investment returns from the start to the trough of the recession as shown in **Figure 3**.<sup>3</sup> If a recession were to occur, this would bode well for the utilities sector on a comparative basis.

<sup>2</sup> Data from the Bureau of Economic Analysis

<sup>3</sup> Morgan Stanley Research

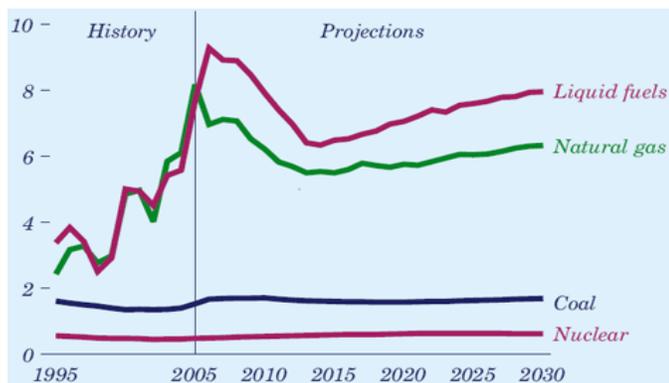
**Figure 3. Sector Performance during Recessions**  
**Defensive Sectors Do Best During Recession Periods**



**Interest rates** are a second macroeconomic driver for the utilities sector. During periods of rising interest rates, utility stocks have returned a 3.25% annual return compared with an S&P 500 return of -6.5%.<sup>4</sup> In contrast, during periods of Fed easing, the utilities sector has experienced average returns of -2.2%.<sup>5</sup> This return is actually the worst among all S&P sectors and is in sharp contrast to the average S&P 500 return of 18.2%. Given that the Fed has lowered the Federal Funds Rate by 75 basis points over the past two months to 4.5%; this does not bode well for utilities stocks going forward. On the other hand, the likelihood of further interest rate reductions is minimal due to increasing inflationary pressures caused by high energy prices. Thus, this uncertain interest rate environment will likely not be a significant economic driver for utilities in the near term.

**Figure 4. Fuel Prices (\$ Per Million BTU)**

**Rising energy prices** are becoming an increasingly important driver for utilities as well. On an industry-wide basis, fuel and purchased power costs account for approximately 95



<sup>4</sup> Lehman Brothers

<sup>5</sup> Bernstein Research

percent of the cost increases experienced by utilities in the past five years.<sup>6</sup> The increases in fuel costs have been unprecedented by historical standards, affecting every major industry fuel source. Natural gas has experienced a more than 300-percent increase since 1999. Real natural gas prices are at their highest level in modern history. The price of oil-based fuels has risen over 60 percent since 2003. The price of oil-based fuels and natural gas are expected to remain inflated over the next 25 years as shown in **Figure 4**. In addition, oil prices have a significant impact on other fuels, and have driven up the costs of mining and shipping coal as well. The ability to pass a portion of these costs on to customers is critical for utilities to maintain their profitability.

**Government regulation** is a significant driver in the utilities industry since government price caps and regulatory restrictions play a large part in determining returns in the industry. The future of government regulation is unclear, however, given that on the one hand, regulators are cautious due to recent negative experiences with deregulation in California and the Northeast. On the other hand, rising generation costs are forcing regulators and utilities alike to develop innovative methods of reducing end-user costs. A recently added ingredient in the stew of government regulations is Renewable Portfolio Standards (RPS), which require utilities to purchase a certain portion of their energy needs from renewable sources. Many states have implemented RPS, and it is anticipated that such standards will increase in the future, likely increasing the cost base for many utilities.

## **Sector Valuation**

Given the macroeconomic situation outlined above, it is important to evaluate the attractiveness of the utilities sector using comparative multiple analysis.<sup>7</sup> This analysis determines the attractiveness of the utilities sector based upon a comparison of the current valuations to historic means. **Figure 5** compares the S&P Utilities on an absolute basis to determine whether or not the sector is trading below or above its historical average. The table clearly shows that all valuation metrics are above their historical means with the price-to-book, price-to-EBITDA, and price-to-cash flow trading significantly above their 10-year means. Overall, on an equal-weighted basis, the current valuations are 21% higher than historic means implying that the sector is overvalued.

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<sup>6</sup> Investopedia Industry Handbook

<sup>7</sup> Data from StockVal

**Figure 5. S&P Utilities Comparative Multiple Analysis: Past 10 Years**

<b>Absolute Valuation</b>	<b>High</b>	<b>Low</b>	<b>Mean</b>	<b>Current</b>	<b>Change from Mean</b>	<b>Valuation Opinion</b>
<b>P/Forward E</b>	17.9	10.0	14.5	15.9	10%	Slightly High
<b>P/S</b>	1.7	0.8	1.3	1.5	15%	Slightly High
<b>P/B</b>	2.4	1.1	1.8	2.2	22%	High
<b>P/EBITDA</b>	6.3	2.6	4.4	5.9	34%	Very High
<b>P/CF</b>	9.1	4.2	6.6	8.3	26%	High
<b>Average</b>					<b>21%</b>	<b>High</b>

**Figure 6** compares the S&P Utilities relative to the S&P 500 to determine how the sector is trading relative to the market. The table shows that all valuation metrics are trading well above their 10-year means with the average deviation from the mean being 45%. This analysis further confirms the notion that the utilities sector is significantly overvalued.

**Figure 6. S&P Utilities Comparative Multiple Analysis: Past 10 Years**

<b>Relative to S&amp;P 500</b>	<b>High</b>	<b>Low</b>	<b>Mean</b>	<b>Current</b>	<b>Change from Mean</b>	<b>Valuation Opinion</b>
<b>P/Forward E</b>	1.13	0.42	0.68	1.04	53%	Very High
<b>P/S</b>	1.02	0.43	0.68	0.94	38%	Very High
<b>P/B</b>	0.80	0.25	0.52	0.74	42%	Very High
<b>P/EBITDA</b>	0.86	0.30	0.55	0.80	45%	Very High
<b>P/CF</b>	0.76	0.26	0.48	0.69	44%	Very High
<b>Average</b>					<b>45%</b>	<b>Very High</b>

## **Sector Outlook**

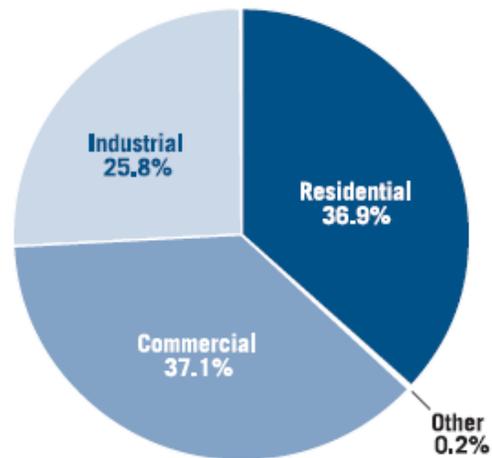
In sum, the macroeconomic drivers of the utility sector neither indicate a positive or negative operating environment. The slowing U.S. economy will likely reduce consumer demand for utilities; however, relative to other sectors, the decrease in demand will be limited. Similarly, if a recession materializes, the utility sector stands to benefit as investors search for safe havens. The future interest rate environment is ambiguous as the Fed's easing appears to be nearing an end. However, a beneficial period of prolonged tightening by the Fed does not appear imminent. Similarly, rising input costs may constrain utilities unless regulators allow these costs to be passed on to the consumer. Similarly, increased legislative efforts to reduce greenhouse emissions and encourage

renewable energy sources may negatively impact the utilities sector. In addition, the comparative multiple analysis of the utilities sector clearly indicates that the sector is overvalued. This is true on an absolute basis as well as a comparative basis. Thus, an uncertain operating environment coupled with extremely high valuations warrants a negative outlook for the sector as a whole.

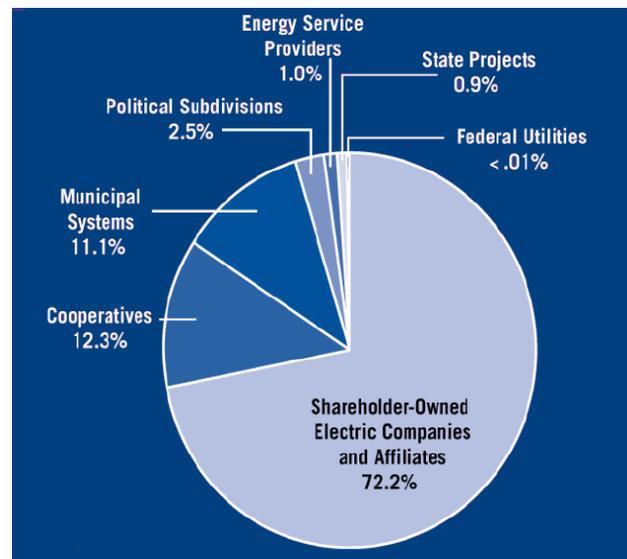
## Industry Analysis<sup>8</sup>

AEP is part of the electric utilities industry within the utilities sector. The electric power industry is a large industry that had over \$300 billion in revenue in 2006 and accounts for over 3% of U.S. GDP. It is one of the largest industries in the country, surpassing other industries such as the pharmaceutical and airline industries. **Figure 7** details the breakdown of electricity sales by class of service. Residential and commercial sales account for 74% of all electricity sales. The industry is comprised of a variety of electric providers that include shareholder-owned electric companies, cooperatives, municipal systems, political systems, and other energy service providers. **Figure 8** details the percentage of customers serviced by each type of provider and shows that over 72% of customers are served by shareholder-owned companies such as AEP.

**Figure 7. Electricity Sales by Class of Service 2006**



**Figure 8. Customers Served by Each Provider Type**



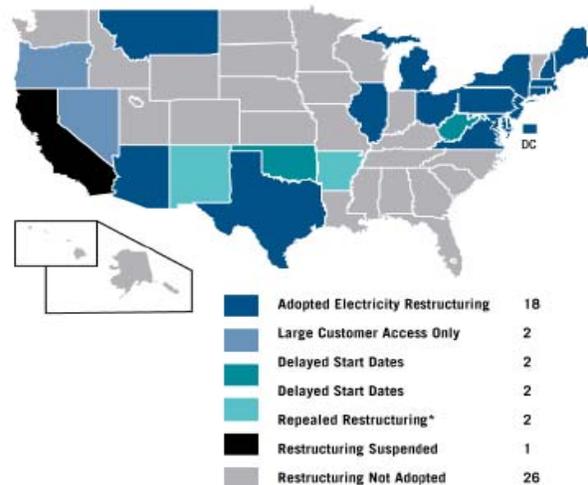
<sup>8</sup> Adapted from the Edison Electric Institute "Electric Industry: Key Facts"

## Regulatory History<sup>9</sup>

**Federal regulation** has played a crucial role in the evolution of the electric utilities industry and a brief review will provide insights into the future prospects for the industry. Electric utilities first began to develop in the 1890s in primarily urban areas as a natural monopoly since the service was deemed as vital to the economic and social fabric of the community. The first state regulation of utilities began 1907 in New York and Wisconsin although there was limited federal regulation of multi-state utilities at this time. Throughout the 1920s there was extensive industry consolidation as many small holding companies were integrated into larger holding companies. The stock market crash of 1929 and the subsequent depression revealed that many holding companies were over-leveraged. As a result, Congress passed the Federal Power Act (FPA) in 1935 to federally regulate interstate wholesale power transactions and the transmission of electric power. The FPA also created the Federal Power Commission (FPC), which ensured that electricity rates were “reasonable, nondiscriminatory, and just to the consumer.” In 1970, the FPC’s functions were transferred to the newly created Department of Energy and the Federal Energy Regulatory Commission (FERC) and regulatory activity continued to increase. In 1996, FERC opened the electric transmission lines owned by shareholder-owned companies to all suppliers. This served to increase competition as a substantial number of suppliers were now able to compete for these lines in the wholesale electricity market. Today, FERC has the authority to regulate the prices, terms, and conditions of these wholesale power sales and transmission services.

**State regulatory** activity increased along with federal regulation until the 1990s when a number of states moved to restructure portions of the retail electricity industry. Their aim was to lower costs by stimulating competitive markets for the generation portion of customers’ bills; these states moved away from the traditional model in which state regulators

**Figure 9. Status of Electric Deregulation**



<sup>9</sup> Edison Electric Institute “Electricity 101”

set the retail prices for power. The electric power generation portion of customers' rates was now subject to competitive bidding in which electricity producers would compete for contracts to serve the retail customers of electric companies. Despite efforts at deregulation, authorities were still not completely comfortable leaving utilities alone to the vagaries of the market after several severe price spikes and pronounced power shortages. Thus, as **Figure 9** shows, a substantial portion of this deregulation activity has been delayed or postponed as a result. Nearly half of the states that AEP operates in have adopted some form of restructuring.

**Environmental regulation** has had a significant impact on the electric utilities industry as well. Over the years, the Clean Air Act, the Clean Water Act, and the Toxic Substances Control Act have sought to limit the harmful effect of toxic chemicals on the environment. In addition, several Energy Policy Acts have served to promote fuel diversity, increase energy efficiency, and promote the use of cleaner energy sources. Renewable energy sources like hydropower, solar, biomass, and wind have garnered further attention due to the recent spike in oil prices. Finally, requirements to reduce CO<sub>2</sub> emissions are becoming more stringent and increasing costs for electric power providers. As an example, AEP recently agreed to install extra pollution controls at two coal-fired plants at an estimated cost of \$1.6 billion in addition to paying \$15 million in civil penalties for violating the Clean Air Act. In sum, these regulatory restrictions serve to increase electric provider costs.

### Five Forces Analysis

#### Threat of New Entrants

Incumbent utility players enjoy considerable barriers to entry. Building new generation plants carries high fixed costs and new power producers need substantial investment capital to enter the market. In addition, gaining regulatory approval to build new plants can be a long

**Figure 10. Porter's Five Forces**



and complicated process. Once a power plant is built and a market established, the marginal cost of serving one more customer or offering one more kilowatt-hour is minimal. However, new entrants can only hope to realize low unit costs by capturing a large market share from the beginning and benefiting from economies of scale. Despite these high entry barriers, the unbundling of service offerings does offer some entry opportunities in trading and retailing where up front capital requirements are significantly less.

### **Threat of Substitute Products**

Electric power's main substitute is natural gas. However, market dynamics elevate switching costs and make switching between the two power sources difficult. Short-term demand for power is more or less inelastic. While there are currently no viable substitutes for electricity or natural gas, there are alternative ways to generate this power. For example, development is being conducted on micro turbines and fuel cells; these small generators could potentially allow consumers to bypass traditional power grids altogether, or to limit the use of the power grid during price spikes.

### **Competitive Rivalry**

Rivalry among competitors in the electric industry is becoming more competitive as states depart from the natural monopolies of yesteryear. Electric utilities are increasingly battling for market share in order to create the economies of scale needed to lower costs and remain competitive. Since utilities are ubiquitous and the product commoditized, competitors often rely on lowering prices to capture market share, thereby lowering industry profitability. Competitors are attempting to differentiate service offerings, segment the market, and bundling value-added services. However, regulations tend to hamper these efforts.

### **Supplier Power**

The power systems supply business is dominated by a handful of companies, including General Electric and Siemens. Competition is limited and these firms are able to exert significant power over electric generation companies. As the industry's vertical integration dissolves into specialized generation suppliers, network suppliers, traders, and retailers, supplier power will likely increase.

## Buyer Power

Buyer power in the industry is mitigated primarily due to the high switching costs and protective government regulations. However, deregulation and the heightened competitive environment is increasing buyer power. Although residential customers still exert minimal power, commercial and industrial customers have substantial leverage. Long-term purchasing agreements are now the norm for commercial buyers, thereby shifting the risk of wholesale pricing volatility towards the utility company.

## Recent Industry Performance<sup>10</sup>

The Five Forces Analysis portrays an industry that is moderately attractive, yet faces increasing challenges. This trend is reflected in many of electric industry's performance metrics as well (**Figure 11**). Industry sales have grown at 6.5% over the past 5 years and 5.9% over the past year, whereas sales for the S&P 500 have grown at 14.4% and 14.6% over the same time periods. This sales growth has been driven by the following factors: i) regulators approving higher rates to customers ii) higher generation margins as lower-priced hedges are renewed iii) strong demand due to population and weather trends. Industry earnings have grown at a rate 4.6% over the past 5 years and an impressive 27.8% over the past year. Much of this earnings growth has been aided by rate increases and strong wholesale power prices. Earnings for the S&P 500 grew at 23.6% and 18% for these respective periods. Operating margins have increased from 16.3% for the past 5 years to 17% for the past year. The recent increases in operating margins were primarily driven by greater demand and more extreme weather

**Figure 11. Performance Metrics**

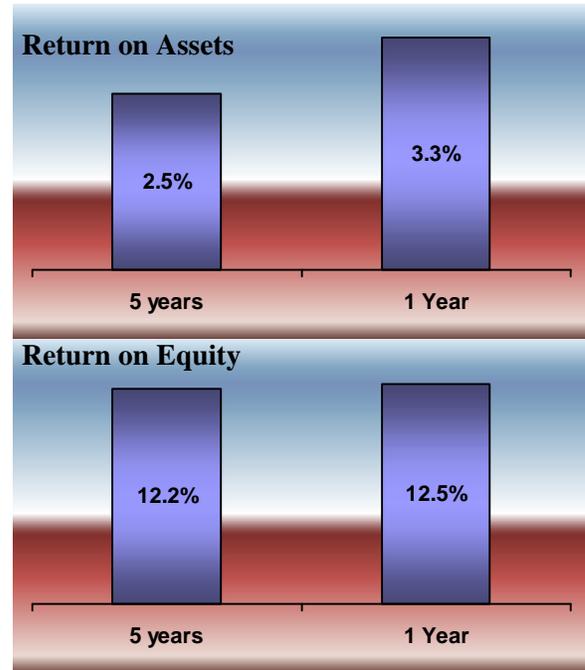


<sup>10</sup> Adapted from Reuters and the Edison Electric Institute 2006 Financial Report

conditions. However, these operating margins lagged behind the S&P 500 operating margins for the same time period.

Finally, as shown in **Figure 12**, the industry's return on assets has increased from 2.5% over the past five years to 3.3% over the past year. This is significantly lower than the respective 7.3% and 8.6% for the S&P 500 as a whole, primarily because of the capital-intensive nature of the electric utilities industry. The industry's return on equity is significantly higher at 12.2% for the past five years and 12.5% for the previous year. However, this is still significantly lower than the five year S&P 500 rate of 18.7% and the one year rate of 21.4% indicating that the electric utilities industry is in the mature phase of the product lifecycle.

**Figure 12. Profitability Ratios**



### **Industry Outlook<sup>11</sup>**

Overall, the outlook for the electric utilities industry is mixed. Regulatory actions that threatened to increase competition and lower margins have slowed. However, environmental regulations promoting reduced emissions and renewable energy sources are on the rise. The Five Forces Analysis indicates that the industry positively benefits from a low threat of new entrants and a low threat of substitute products. On the other hand, the industry is characterized by high supplier power, medium buyer power, and medium rivalry among competitors. In addition, the relative attractiveness of the industry appears to be trending downward. Industry performance measures have been improving over the past few years due to a reduction of business risk, divestitures of non-core businesses, healthy demand, and improved operating efficiency. Looking forward, capital spending will likely rise due to increasing investment in emissions control equipment and the need for new transmission and distribution infrastructure as well as

<sup>11</sup> Edison Electric Institute 2006 Financial Report

new plants to replace the aging generation infrastructure. Favorable capital markets have raised the price of the sector by over 16% in the past year and the valuation metrics are 21% higher than their ten year mean. Relative to the S&P 500, the valuation metrics for the sector are 45% higher than their ten year mean. Because of this, the electric utilities industry can be expected to under perform the market over the next 12 months.

## Company Analysis

### Strategy & Strengths

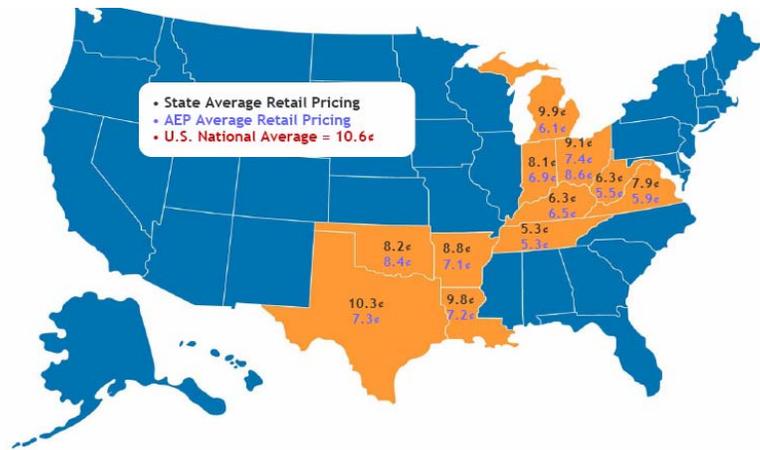
AEP's overarching strategy is to focus on its core utility operations and to deliver low-cost electric power to the customers it serves through economies of scale. AEP's largely coal-based production costs are among the lowest in the nation. This strategy is implemented through efficient operations and the maximization of the power that is delivered from its generation facilities. Thus, AEP is able to sustain a competitive advantage through the strength and scale of its assets and operations. AEP's footprint is evident throughout the energy value chain as it ranks second in the industry in domestic generation capacity, first in transmission capability, and first in distribution capability. This footprint is shown graphically in **Figure 13**.

**Figure 13. AEP's Operating Footprint**



AEP's size allows it to benefit from economies of scale and provide electricity below market prices. In fact, AEP's retail rate for electricity is below the national average in each state in which it operates as shown in **Figure 14**. Further, AEP's average retail price is below the state average in all but two of the states in which it operates.

**Figure 14. Electricity Retail Prices**



Another source of competitive advantage for AEP is through its continued innovation and deployment of leading technological advancements. Through its GridSMART initiative, AEP is moving technology into the field in the form of smart meters, automated distribution networks, and programs to reduce consumption during peak demand periods.

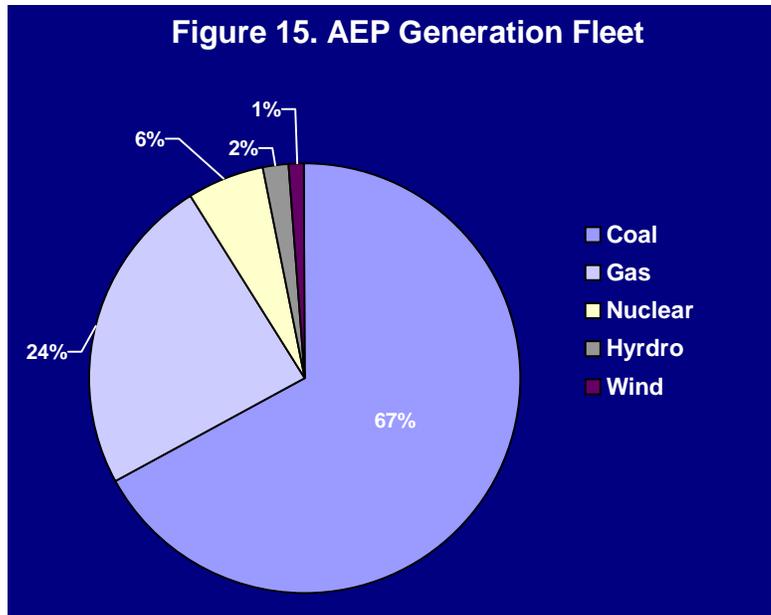
Finally, AEP maintains a comprehensive regulatory strategy focused on maximizing cash flows through minimized regulatory lag. By maximizing the frequency of its filings for rate relief as well as closely monitoring all costs related to the implementation of environmental legislative mandates, AEP is attempting to quickly pass on increased costs to customers and maintain its margins. As evidence of this initiative, AEP has secured some form of rate relief within the past year in 6 of the 11 states in which it operates. AEP's low cost structure, economies of scale, technological innovation, and aggressive rate recovery provide it with a competitive advantage within the electric utilities industry.

## Weaknesses<sup>12</sup>

AEP operates in a mature industry with steady and stable demand growth. Although this reduces the overall risk to the firm, it prevents dramatic innovation and the potential for phenomenal revenue growth. AEP's CAGR in revenue is expected to remain around 5% for the next 5 years, limiting the potential for abnormal returns.

<sup>12</sup> Adapted from 10/9/07 Bernstein Carbon Symposium Presentation

Another weakness for AEP is the concentrated nature of its generation portfolio. Although AEP's dependence on coal and gas is decreasing, these two inputs still account for 91% of AEP's generation portfolio as shown in **Figure 15**. This is in contrast to the industry average in which coal accounts for 49% and natural gas accounts for 19% of generating capacity. AEP's

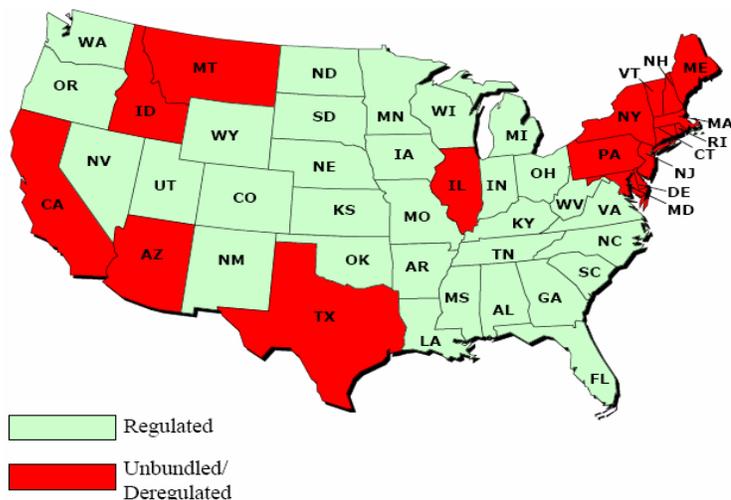


concentration poses a risk due to the rising costs of coal extraction and transportation as well as the elevated price of natural gas. Coal, gas, and other fuel costs are expected to rise 13% over the coming year which could put substantial pressure on AEP.

Additionally, environmental regulation to limit CO<sub>2</sub> emissions adversely affects coal-fired plants. As these mandates become increasingly stringent, AEP is at a competitive disadvantage as it is the 13<sup>th</sup> highest CO<sub>2</sub> emitter within the industry. In addition, much of AEP's operating footprint lies in cost-regulated states in which costs can be passed on to the consumer, but no profit windfalls are allowed. However,

companies operating in deregulated states may be able to increase profits further by raising costs and increasing profits (**Figure 16**). The majority of the profit increase will go to non-fossil segments because firms in these states have low emissions and almost half of the generation is projected to come from non-fossil sources in these states.

**Figure 16. Cost-Regulated States**



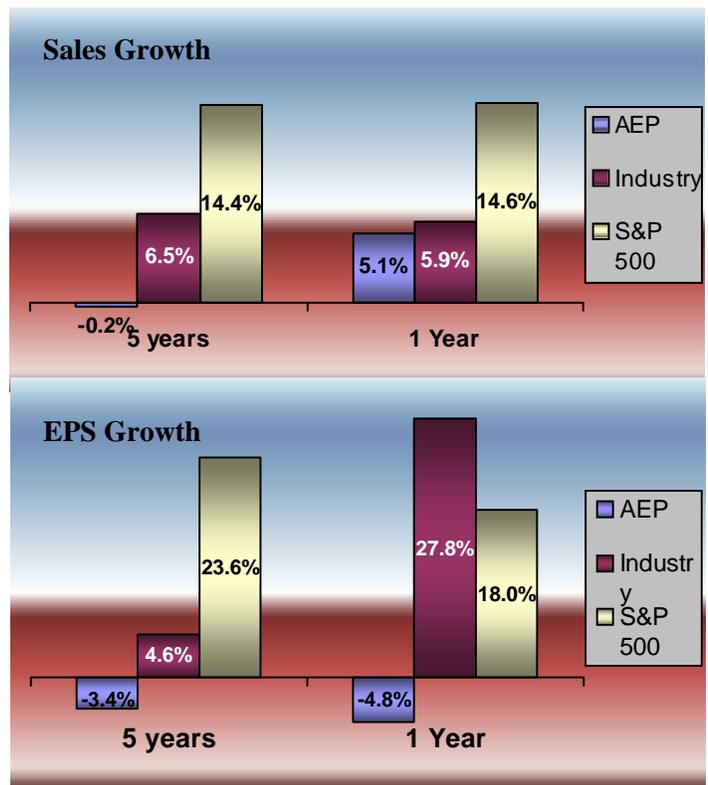
## Financial Statements Analysis<sup>13</sup>

Analyzing AEP's financial performance on the basis of growth, profitability, management effectiveness, efficiency, and debt ratios yields a comprehensive picture of AEP. Comparing these metrics to those of its industry and market peers highlights relative strengths and weaknesses.

### Growth Analysis

AEP's sales and EPS growth are shown in **Figure 17**. AEP's sales have grown at an anemic -0.2% over the past 5 years, trailing the industry average of 6.5% and the S&P 500 average of 14.4%. However, AEP's sales growth has improved substantially over the past year and only slightly trails the industry average of 5.9%. AEP's average EPS growth over the past 5 years has been -3.4% compared with an industry average of 4.6% and an S&P 500 growth rate of 23.6%. Even on a one year basis, AEP's EPS growth rate of -4.8% trails the industry average of 27.8%.

**Figure 17. Growth Analysis**



Overall, AEP trails its industry competitors in sales and EPS growth. Within the industry, AEP ranks in the 20<sup>th</sup> percentile for its 5-year sales growth rate and in the 30<sup>th</sup> percentile for its 5-year EPS growth rate.

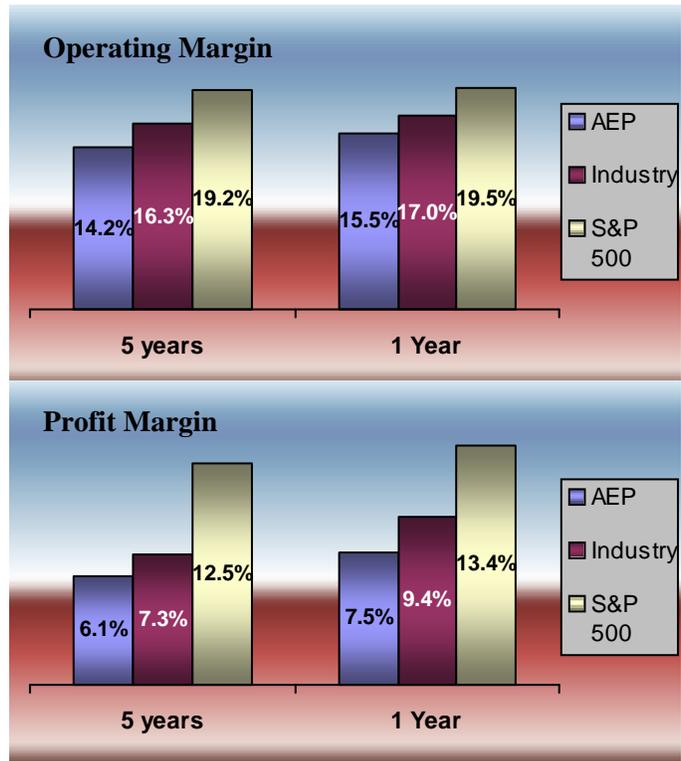
### Profitability Analysis

Comparing AEP's operating margin and profit margin to that of industry peers highlights the relative strength of AEP's profitability (**Figure 18**). AEP's operating margin for the past 5 years has been 14.2% compared with an industry average of 15.5%.

<sup>13</sup> Data from StockVal, Reuters, and Yahoo Finance

Both of these trail the S&P 500 operating margin of 19.2%. A similar situation plays out when analyzing AEP's operating margin over a one year period. AEP's operating margin of 15.5% trails the industry operating margin of 17.0% and the S&P operating margin of 19.5%. AEP's profit margin over the past 5 years has trailed that of its industry competitors as well by 1.2%. In addition, its profit margin is less than half that of the S&P 500. This underperformance is also evident in the one year profit margin as AEP's profit margin is 1.9% less than that of the industry and 5.9% less than that of the S&P 500. Although these metrics indicate that AEP lags its competitors in profitability, AEP's economies of scale and volume-based business model offset these lower margins to some extent.

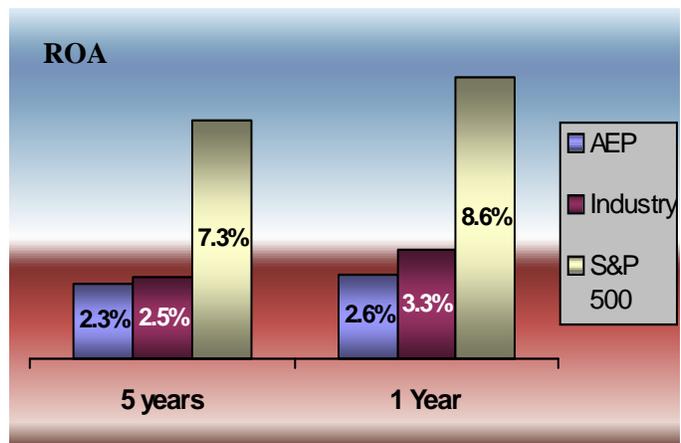
**Figure 18. Profitability Analysis**



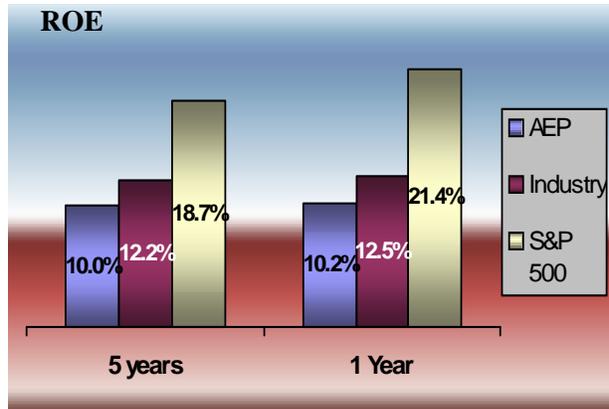
**Management Effectiveness Analysis**

Return on assets and return on equity are excellent gauges for the effectiveness of management in producing shareholder returns in an efficient manner. As shown in **Figure 19**, AEP's ROA of 2.3% over the past 5 years and its ROA of 2.6% over the past year trail the industry averages. The asset-intensive nature of the utilities industry prohibits a high return on assets.

**Figure 19. Management Effectiveness Analysis**



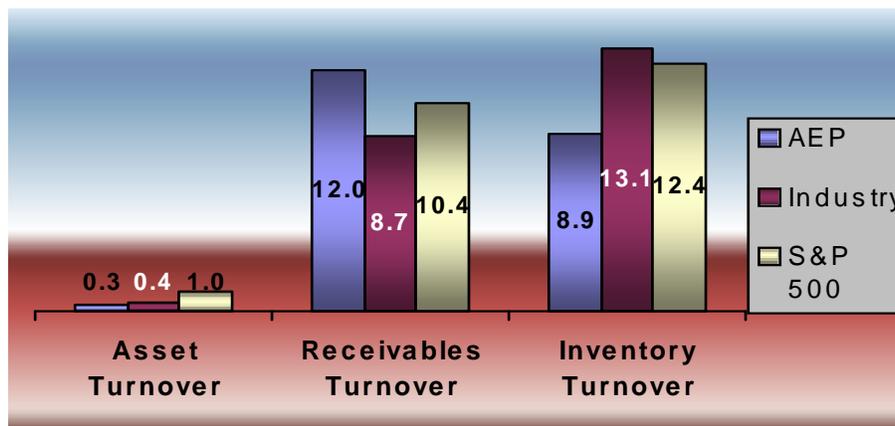
AEP's ROE of 10% over the past 5 years similarly lags the industry average of 12.2%. This holds true over the one year time period as well. In aggregate, AEP ranks in the 40<sup>th</sup> percentile within the industry for both its 5-year ROA and 5-year ROE. This indicates that management is not effectively generating shareholder returns.



### Efficiency Analysis

Asset turnover, receivables turnover, and inventory turnover are three effective metrics to analyze the efficiency of AEP's operations. AEP's asset turnover ratio was 0.3 compared with an industry average of 0.4 as shown in **Figure 20**. This is somewhat disconcerting given that AEP's strength lies in its high volume operations and this volume should lead to a higher than average asset turnover. On a more positive note, AEP's receivables turnover of 12 is above both the industry average and the S&P 500 average. This implies that AEP is able to turnover its accounts receivables every 30 days and manage its customers payments in an efficient manner. Finally, AEP turns over its inventory 8.9 times per year. This is significantly lower than the industry average of 13.1 times. This may be a result of AEP's extensive transmission and distribution network which may delay the sale of electricity. In aggregate, AEP's efficiency is comparable to the industry as a whole.

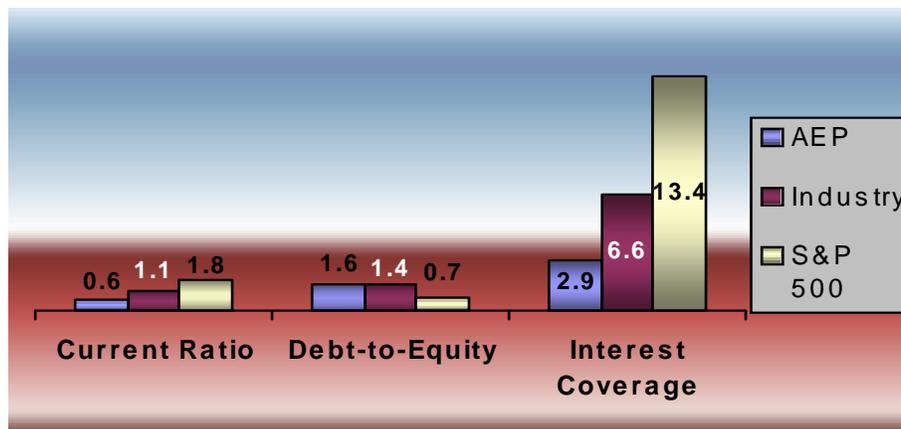
**Figure 20. Efficiency Analysis**



## Debt Analysis

The current ratio, debt-to-equity, and interest coverage ratio provide an excellent snapshot of AEP's use of debt to fund its operations (**Figure 21**). AEP's current assets are not sufficient to cover its current liabilities as its current ratio is only 0.6 compared with an industry average of 1.1. Similarly, AEP's debt-to-equity ratio is 1.55 compared with an industry average of 1.44. AEP's use of debt to fund its operations is significantly higher than that of its peers. Finally, AEP's interest coverage ratio is 2.9 compared with an industry average of 6.6. Although an interest coverage ratio of 2.9 implies that AEP has enough earnings to cover the interest on its debt, this ratio is significantly lower than that of the industry. Overall, the capital intensive nature of the electric utilities industry entails a significant use of debt. However, in the early part of this decade, the collapse of Enron and the adverse effects of deregulation caused an industry wide liquidity crunch. In light of this, AEP's use of debt and excessively low current ratio are disconcerting. AEP's current ratio ranks in the 5<sup>th</sup> percentile and its debt-to-equity ratio ranks in the 20<sup>th</sup> percentile within the industry.

**Figure 21. Debt Analysis**



## Equity Valuation: Multiples<sup>14</sup>

Comparative multiple analysis provides insight into whether or not AEP's stock is overvalued or undervalued. This analysis is conducted by comparing AEP's current valuation to its 10-year mean, comparing AEP's current valuation relative to the S&P 500, and comparing AEP's stock to the utilities sector.

<sup>14</sup> Data from StockVal

### Absolute Valuation

Although somewhat imprecise, comparing AEP's current multiples to 10-year averages and assuming some form of mean reversion allows for an extrapolation of the intrinsic value of AEP's stock (**Figure 22**). Based upon this evaluation, AEP's implied valuation should be **\$39.17** which is 18.6% lower than the current share price of \$48.17. On an absolute basis, AEP looks overvalued.

**Figure 22. AEP Comparative Multiple Analysis: Past 10 Years**

Absolute Valuation	High	Low	Mean	Current	Target Multiple	Target x Per Share	Target Price
<b>P/Forward E</b>	20.3	5.9	13.9	15.0	14.0	3.12	\$ 43.68
<b>P/S</b>	1.57	0.45	1.08	1.46	1.1	33.71	\$ 37.08
<b>P/B</b>	3.0	0.7	1.6	2.0	1.6	24.15	\$ 38.64
<b>P/EBITDA</b>	8.9	1.6	4.0	5.0	4.0	9.49	\$ 37.95
<b>P/CF</b>	10.8	2.9	6.0	7.4	6.0	6.41	\$ 38.46
<b>Average</b>							<b>\$ 39.17</b>

### Valuation Relative to S&P 500

Comparing AEP's valuation relative to the S&P 500 shows that relative to the S&P 500, all of AEP's multiples are significantly higher than the 10-year mean, with the price-to-sales multiple 68% higher than the 10-year mean (**Figure 23**). On average, AEP is trading 46% higher relative to the S&P 500. If AEP's stock is 46% overvalued, this implies that the actual value of AEP's stock should be **\$33**.

**Figure 23. AEP Comparative Multiple Analysis to S&P 500**

Relative to S&P 500	High	Low	Mean	Current	Change from Mean	Valuation Opinion
<b>P/Forward E</b>	1.06	0.34	0.73	1.05	44%	Very High
<b>P/S</b>	1.03	0.31	0.60	1.01	68%	Very High
<b>P/B</b>	0.71	0.18	0.48	0.68	43%	Very High
<b>P/EBITDA</b>	1.22	0.22	0.50	0.69	38%	Very High
<b>P/CF</b>	0.84	0.23	0.47	0.65	38%	Very High
<b>Average</b>					<b>46%</b>	<b>Very High</b>

### Valuation Relative to Sector

Valuing AEP relative to the S&P 500 indicates that AEP is highly overvalued. However, much of this derives from the fact that the utilities sector as a whole is overvalued. Comparing AEP relative to the utilities sector indicates that AEP is only

slightly overvalued (**Figure 24**). Four of the five metrics are comparable to 10-year averages, with only the price-to-sales multiple at an 18% premium. Overall, AEP is only 4% overvalued, implying that the true share price should be **\$46.32**.

**Figure 24. AEP Comparative Multiple Analysis to Sector**

Relative to Sector	High	Low	Mean	Current	Change from Mean	Valuation Opinion
<b>P/Forward E</b>	1.35	0.59	0.92	0.94	2%	In Line
<b>P/S</b>	1.16	0.55	0.85	1.00	18%	High
<b>P/B</b>	1.33	0.62	0.87	0.88	1%	In Line
<b>P/EBITDA</b>	1.99	0.48	0.86	0.85	-1%	In Line
<b>P/CF</b>	1.56	0.67	0.88	0.88	0	In Line
<b>Average</b>					<b>4%</b>	<b>Slightly High</b>

### Equity Valuation: Discounted Cash Flow<sup>15</sup>

The discounted cash flow valuation technique provides the most reliable method for uncovering the true value of AEP as it includes the most detailed analysis of AEP's historical and future operating performance. Using the projected income statement shown in **Appendix 1** as well as the discounted cash flow model shown in **Appendix 2**, an intrinsic value for the AEP stock of **\$46.36** per share is derived. The assumptions that drive this analysis are outlined below.

#### Discounted Cash Flow Assumptions

- ✓ *Total Revenues*: Growth inputs include a 5-year historical growth rate of -0.2%, the 1-year historical growth rate of 5.1%, analyst projections of 6.3% growth, and an analysis of business segment expectations from the 10-K to arrive at long-term growth rate of 5.5% through 2015 and 5% thereafter.
- ✓ *Fuel Expense*: Set as a % of revenues and based upon a 3-year historical average. Fuel expenses trend downward based upon consensus estimates for oil prices.
- ✓ *Option & Maintenance Expense*: Set as a % of revenues and based upon 3-year historical average.
- ✓ *Depreciation Expense*: Set as a % of revenues and based upon 3-year historical average, with a slight increase in later years due to increased capital expenditures.
- ✓ *Capital Expenditures*: Set per management expectations in the near term, with longer term capital expenditures decreasing towards historical averages as a % of revenues.

<sup>15</sup> Data from AEP 10-K, AEP Annual Report, and StockVal

- ✓ *Operating Income:* Based on expense and revenue assumptions listed above with margin improvements through 2010 and constant thereafter.
- ✓ *Interest Expense:* Set as a % of revenues and based upon 3-year historical average in the near term
- ✓ *Taxes:* Set as a % of revenues and based on the 5-year historical average.
- ✓ *Working Capital:* Inventory, accounts receivable, accounts payable, and other balance sheet items set as a % of revenues and based on 3-year historical averages.
- ✓ *Shares Outstanding:* The number of basic and diluted shares outstanding is projected to stay relatively constant.
- ✓ *Market Risk Premium:* 5%
- ✓ *Risk-free Rate:* 4%
- ✓ *Beta:* 0.98
- ✓ *Terminal Discount Rate:* 9%
- ✓ *Terminal Free Cash Flow Growth Rate:* 4.5%

### Sensitivity Analysis

DCF analysis is highly sensitive to changes in the discount rate and the terminal free cash flow growth rate. These sensitivities are modeled in **Figure 25** to determine the range of possible values for a share of AEP stock. Although the range of valuations differs dramatically, valuations in the low to mid \$40s are the most prevalent indicating that the CAPM assumptions utilized are reasonable and justified.

**Figure 25. DCF Sensitivity Analysis**

		Terminal Discount Rate						
		7.0%	7.5%	8.0%	8.5%	9.0%	9.5%	10.0%
Terminal FCF Growth	3.0%	\$ 57.89	\$ 49.97	\$ 43.68	\$ 38.57	\$ 34.34	\$ 30.80	\$ 27.79
	3.5%	\$ 64.85	\$ 55.11	\$ 47.58	\$ 41.60	\$ 38.79	\$ 33.14	\$ 29.74
	4.0%	\$ 74.12	\$ 61.71	\$ 52.46	\$ 45.32	\$ 42.32	\$ 37.03	\$ 32.21
	4.5%	\$ 87.10	\$ 70.52	\$ 58.74	\$ 49.96	\$ 46.36	\$ 39.12	\$ 35.39
	5.0%	\$ 106.56	\$ 82.85	\$ 67.11	\$ 55.92	\$ 51.47	\$ 44.17	\$ 38.87

### Equity Valuation: Summary

The various equity valuation methods provide a range of valuations for AEP. The DCF model predicts an intrinsic value of \$46.36 per share. The comparative multiple analysis yields a price target of \$39.17 on an absolute basis, a price target of \$33 in

comparison to the S&P 500, and a price target of \$46.32 in comparison to the sector. Due to the fact that the DCF analysis seems to be the most reliable valuation method, I have weighted this valuation with a 50% weighting and assigned a weighting of 50% to the average of the 3 multiple price targets. This yields a final price target for a share of AEP stock of **\$43**, implying that the stock is nearly 11% overvalued.

## **Conclusion**

Although AEP operates in a sector with stable and measured revenue growth, the sector outlook is moderate at best. Relative to the S&P 500, the valuation metrics for the sector are 45% higher than the sector's ten year mean, implying that the utilities sector is significantly overvalued. In addition, AEP is at a competitive disadvantage with the onset of increased CO<sub>2</sub> legislation due to its heavy reliance on coal-fired generating plants. AEP's earnings are expected to grow at a meager 6% while earnings within the sector are expected to grow at 9%. AEP lags its industry peers in growth, profitability, management effectiveness, and the use of debt. Similarly, all of the valuation metrics indicate that AEP is overvalued at its current price. A weighted-average of the various valuation techniques indicates that a share of AEP stock is 11% higher than its intrinsic value. **Thus, I am recommending AEP as an immediate sell and assigning a one year price target of \$43.**



## Appendix 1: AEP Pro Forma Income Statement

<b>AEP Income Statement - GAAP (In Millions)</b>	FY 2009E	FY 2008E	FY 2007E	FY 2006	FY 2005	FY 2004	FY 2003	FY 2002	Historical Averages
Utility Revenues	13,184.84	12,800.82	12,427.98	12,066.00	11,157.00	10,620.00	10,871.00	10,446.00	11,032.00
Gas & MEMCO Revenues	612.00	446.00	214.00	(85.00)	463.00	3,068.00	3,097.00	2,071.00	1,722.80
Other Revenues	640.94	647.41	647.41	641.00	491.00	557.00	577.00	791.00	611.40
<b>Total Revenues</b>	<b>14,437.78</b>	<b>13,894.23</b>	<b>13,289.39</b>	<b>12,622.00</b>	<b>12,111.00</b>	<b>14,245.00</b>	<b>14,545.00</b>	<b>13,308.00</b>	<b>13,366.20</b>
<i>Consensus Revenue Estimates</i>	15,320.00	14,679.00	13,409.00						
Fuel Expenses	4,672.60	4,550.49	4,223.84	3,817.00	3,592.00	3,059.00	3,053.00	2,577.00	3,219.60
Energy for Resale	995.80	954.14	804.54	856.00	687.00	670.00	707.00	532.00	690.40
Gas for Resale	153.20	146.79	134.09	-	256.00	2,807.00	2,850.00	1,946.00	1,571.80
Option and Maintenance	4,289.60	4,110.12	3,754.52	3,639.00	3,619.00	3,676.00	3,673.00	4,065.00	3,734.40
Asset Impairment	153.20	146.79	134.09	209.00	39.00	-	650.00	318.00	243.20
(Gain) Loss on Disposition	-	-	-	(69.00)	(120.00)	(4.00)	-	-	(38.60)
Depreciation and Amortization	1,532.00	1,467.90	1,340.90	1,467.00	1,348.00	1,324.00	1,299.00	1,348.00	1,357.20
Taxes not Including Income Taxes	919.20	880.74	804.54	737.00	763.00	730.00	681.00	718.00	725.80
Total Expenses	12,715.60	12,256.97	11,196.52	10,656.00	10,184.00	12,262.00	12,913.00	11,504.00	11,503.80
<b>Operating Income</b>	<b>2,604.40</b>	<b>2,422.04</b>	<b>2,212.49</b>	<b>1,966.00</b>	<b>1,927.00</b>	<b>1,983.00</b>	<b>1,632.00</b>	<b>1,804.00</b>	<b>1,862.40</b>
Other Income	270.00	265.00	350.00	246.00	237.00	503.00	160.00	138.00	256.80
Investment Value Losses	-	-	-	-	(7.00)	(15.00)	(70.00)	(321.00)	(82.60)
Interest Expense	837.39	805.87	770.78	732.00	697.00	781.00	814.00	775.00	759.80
Subsidiary Dividend Requirements	7.00	7.00	7.00	3.00	7.00	6.00	9.00	11.00	7.20
<b>Income Before Taxes, Minority Interest, &amp; Equity Earnings</b>	<b>2,030.01</b>	<b>1,874.17</b>	<b>1,784.70</b>	<b>1,477.00</b>	<b>1,453.00</b>	<b>1,684.00</b>	<b>899.00</b>	<b>835.00</b>	<b>1,269.60</b>
Income Tax Expense	669.90	618.48	588.95	485.00	430.00	572.00	358.00	315.00	432.00
Minority Interest Expense	4.00	4.00	4.00	3.00	4.00	3.00	19.00	35.00	12.80
Equity Earnings	5.00	5.00	5.00	3.00	10.00	18.00	-	-	6.20
<b>Extraordinary Loss, &amp; Acc. Change</b>	<b>1,361.11</b>	<b>1,256.69</b>	<b>1,196.75</b>	<b>992.00</b>	<b>1,029.00</b>	<b>1,127.00</b>	<b>522.00</b>	<b>485.00</b>	<b>831.00</b>
Discontinued Ops	(25.00)	(25.00)	(25.00)	10.00	27.00	83.00	(605.00)	(654.00)	(227.80)
Extraordinary Loss				-	(225.00)	(121.00)	-	-	(69.20)
Cum. Affect of Accounting Change	-	-	-	-	(17.00)	-	193.00	(350.00)	(34.80)
<b>Net Income</b>	<b>1,336.11</b>	<b>1,231.69</b>	<b>1,171.75</b>	<b>1,002.00</b>	<b>814.00</b>	<b>1,089.00</b>	<b>110.00</b>	<b>(519.00)</b>	<b>499.20</b>
<b>EPS Basic</b>	<b>3.39</b>	<b>3.12</b>	<b>2.97</b>	<b>2.54</b>	<b>2.09</b>	<b>2.75</b>	<b>1.65</b>	<b>2.40</b>	
<b>EPS Diluted</b>	<b>3.37</b>	<b>3.11</b>	<b>2.96</b>	<b>2.53</b>	<b>2.08</b>	<b>2.75</b>	<b>1.65</b>	<b>2.40</b>	
<i>Consensus EPS Diluted</i>	3.38	3.18	2.92						
<b>Avg # of Shares</b>									
Basic	394,219,523	394,219,523	394,219,523	394,219,523	389,969,636	395,622,137	385,000,000	332,000,000	
Diluted	396,483,464	396,483,464	396,483,464	396,483,464	391,423,842	396,590,407	385,000,000	332,000,000	

## Appendix 2: AEP Discounted Cash Flow

Year	Forecasts										
	2007E	2008E	2009E	2010E	2011E	2012E	2013E	2014E	2015E	2016E	2017E
<b>Revenue</b>	13,288	13,894	14,438	15,232	16,070	16,953	17,886	18,870	19,813	20,804	21,844
% Growth		4.55%	3.91%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.00%	5.00%
<b>Operating Income</b>	2,212	2,422	2,604	2,742	2,893	3,052	3,219	3,397	3,566	3,745	3,932
Operating Margin	16.66%	17.43%	18.04%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%	18.00%
<b>Interest and Other-net</b>	428	548	574	579	611	644	680	717	753	791	830
Interest/Other % of Sales	3.22%	3.94%	3.98%	3.80%	3.80%	3.80%	3.80%	3.80%	3.80%	3.80%	3.80%
<b>Taxes</b>	589	618	670	714	753	794	838	884	928	975	1,024
Tax Rate	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%	33.0%
<b>Minority Int/Other</b>	(25)	(25)	(25)	(25)	(25)	(25)	(15)	(15)	(15)	(15)	(15)
<b>Net Income</b>	1,172	1,232	1,361	1,424	1,504	1,588	1,687	1,780	1,870	1,964	2,063
% Growth		5%	14%	5%	6%	6%	6%	6%	5%	5%	5%
<b>Add Depreciation/Amort</b>	1,500	1,540	1,600	1,980	2,069	2,373	2,504	2,642	2,576	2,704	2,621
% of Sales	11.29%	11.08%	11.08%	13.00%	13.00%	14.00%	14.00%	14.00%	13.00%	13.00%	12.00%
<b>Plus/(minus) Changes WC</b>	(52)	(5)	25	(8)	(8)	(8)	(9)	(8)	(10)	(10)	(11)
% of Sales	-0.39%	-0.04%	0.17%	-0.05%	-0.05%	-0.05%	-0.05%	-0.05%	-0.05%	-0.05%	-0.05%
<b>Subtract Cap Ex</b>	3,962	3,770	3,600	3,046	2,893	3,052	2,862	3,019	2,972	2,913	3,058
Capex % of sales	29.81%	27.13%	24.93%	20.00%	18.00%	18.00%	16.00%	16.00%	15.00%	14.00%	14.00%
<b>Free Cash Flow</b>	<b>(1,342)</b>	<b>(1,003)</b>	<b>(614)</b>	<b>350</b>	<b>692</b>	<b>901</b>	<b>1,320</b>	<b>1,393</b>	<b>1,464</b>	<b>1,746</b>	<b>1,615</b>

DCF Outputs	
Terminal Value	39,720.6
NPV of free cash flows	3,758
NPV of terminal value	14,517
Projected Equity Value	18,275
Free Cash Flow Yield	-7.34%
Shares Outstanding	394.2
<b>Current Price</b>	<b>48.17</b>
<b>Implied equity value/share</b>	<b>46.36</b>
<b>Upside/Downside to DCF</b>	<b>-3.8%</b>

CAPM & DCF Inputs	
Risk Free Rate =	4.50%
Market Risk Premium =	5%
Beta =	0.98
Terminal Discount Rate =	9%
Terminal FCF Growth =	4.5%