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# Calpine Corporation

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**Calpine Corporation** **CPN**

Industry: Independent Power Producer

| | | |
|---|---|---|
| Price: | 05-October-01 | 25.47 |
| 52-Week Range: | | $19 - $58 |
| Market Cap (MM): | | $815 |
| Shares Outstanding (MM): | | 305 |
| 13-week Average Daily Volume (000): | | 5,310 |
| Book Vaulue/Share: | | $9.36 |
| Debt/Equity: | | 284% |
| Price/Book: | | 2.85 |
| Net Cash/Share: | | $4.08 |
| Dividend-Yield: | | 0 |

**Earnings per Share**

| FY Dec. | 2000A | 2001E | 2002E |
|---|---|---|---|
| 1Q | $ 0.07 | $ 0.31 | NA |
| 2Q | $ 0.19 | $ 0.32 | NA |
| 3Q | $ 0.48 | $ 0.87 | NA |
| 4Q | $ 0.35 | $ 0.45 | NA |
| Year | $ 1.09 | $ 1.95 | $ 2.48 |

**Revenues ($B)**

| FY Dec. | 2000A | 2001E | 2002E |
|---|---|---|---|
| 1Q | $ 235 | $ 1,230 | NA |
| 2Q | $ 364 | $ 1,613 | NA |
| 3Q | $ 679 | NA | NA |
| 4Q | $ 1,005 | NA | NA |
| Year | $ 2,283 | $ 4,800 | $ 7,200 |

## Investment Rating

We are initiating coverage on Calpine with a buy rating. Calpine has aggressive plans for expansion over the next several years, which should result in revenue growth of approximately 50%. The company enjoys several competitive advantages over other independent power producers. Chief among these is its portfolio of modern, efficient, natural-gas fired merchant power plants and its history of successful construction and management of these plants. Calpine is diversified within North America. The primary risk the company faces is its high leverage and resulting exposure to fluctuations in electricity prices. However, the company has recently completed development of a trading operation to mitigate this risk with future contracts. Calpine maintains 2/3 of its capacity under future contracts. This figure represents a real measure of the company's risk, and will be carefully watched by analysts.

**Company Overview**

Calpine is primarily a wholesaler of energy, serving customers known as "load-serving entities" such as utilities or municipal power companies. The company serves some large industrial customers directly. The company also explores and develops natural gas, and constructs its own power plants.

Calpine maintains a strategy of covering 2/3 of its capacity with long-term contracts. In addition, the company has built a trading organization in the past year, primarily by hiring talent from other energy trading companies and investing heavily in Information Technology. The main purpose of its trading organization is to stabilize cash flows.[1] [2]

Calpine is expanding almost exclusively with combined cycle natural gas-fired power plants (using F-generation turbines)- "We made a conscious decision to focus on these types of plants because of their emission profile. They're very, very low on emissions, they're highly efficient, and they really make good neighbors." [3]

<u>Earnings per Megawatt</u>: In 2000, Calpine says that it earned $65,000 per megawatt. Going forward, the company is telling investors that it may earn as little as $40,000 per megawatt. [4]Analysts calculate 2000 net income per MW to be approximately $78,000, but foresee it falling to approximately $30,000 by 2005.[5]

Calpine's 1996 IPO consisted of 19.8 MM shares of common stock, the proceeds from which were used to purchase the 83% of the company which Electrowatt still held. [6]

**<u>Company History</u>**:

Calpine was founded in 1984 by its present CEO, Peter Cartwright. Until its IPO in September 1996, the company operated as a subsidiary of the Swiss firm Electrowatt. From 1984-1988, Calpine provided support services such as management and operation to the newly independent power producers. Since 1989, the company has focused on development and ownership of its own gas and geothermal power production units. Recently, the company has focused on development of merchant power plants. Calpine operates exclusively in the U.S. and Canada, although Mr. Cartwright has spoken of expanding into the U.K. soon. [7]

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[1] Peter Cartwright, *Wall Street Transcript* interview, July 2001
[2] Standard and Poor's Ratings Direct, "Calpine Corporation", October 3, 2001
[3] Peter Cartwright, *Wall Street Transcript* interview, July 2001
[4] Ibid.
[5] Morgan Stanley analyst report, "Calpine Corporation", August 2001
[6] Standard and Poor's Ratings Direct, "Calpine Corporation", September 5, 2000
[7] Peter Cartwright, *Wall Street Transcript* interview, July 2001

**Merchant Power Plant Industry**

Many companies in the merchant power industry have chosen the same strategy as Calpine, and are concentrating on natural gas-fired plants. The future profit margin of the industry, known as the Spark Spread between fuel prices and electricity sales prices, will therefore depend greatly on the future cost of natural gas. Natural gas reserves are widely believed to be plentiful at present, particularly with the exploration of new reserves off of the coast of Nova Scotia. Mr. Cartwright has also discussed improving pipeline access from Alaska's North Slope. However, issues of exploration, extraction, transport across borders, and environmental concerns remain before new natural gas reserves can be accessed by U.S. merchant power plants.

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**Strengths and Competitive Advantages**

- Calpine's portfolio is diversified- no single project contributes more than 10% of cash flow.[8] In addition, stable cash flows are assisted by Calpine's new trading organization.

- To date, all of Calpine's projects have been built on time and within budget. Its new plants are all F-generation combined-cycle plants, which allow for standardization and economies of scale in both construction and maintenance.

- Calpine's existing projects have excellent operating histories- through 1998 the average availability of its geothermal plants was 98.9% and of its gas-fired plants was 95.7%.[9] Because Calpine has a newer portfolio of plants than most of its competitors, its availability should remain higher.

- Calpine has been making an effort to maintain a low cost structure. One example of this is its 2000 acquisition of Power Systems Manufacturing, which makes the expensive turbine blades used in gas-fired plants. Calpine claims to be the only company in the industry that can produce its own turbine blades.[10]

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**Risk Factors and Contingencies Facing the Company**

- At present, Calpine has long-term contracts with the State of California for 45% of its planned capacity in that state in 2004-5. Since this summer, Calpine has assured investors that these contracts are inviolable. However, on October 1, 2001, the California Public Utility Commission publicly challenged the validity of these contracts.[11]

- Calpine has little international exposure, and is geographically diverse within the U.S. This provides the company with stability compared to other IPP's with South American and Asian holdings, but also exposes Calpine to several risk factors.

[8] Standard and Poor's Ratings Direct, "Calpine Corporation", Sepember 5, 2000
[9] Ibid.
[10] Peter Cartwright, *Wall Street Transcript* interview, July 2001
[11] Standard and Poor's Ratings Direct, "Calpine Corporation", October 3, 2001

Among these are the uncertainties of deregulation in multiple states, and the fact that Calpine will be a relatively small player in each geographic area and is thus likely to find itself in the position of an energy price taker. Larger, more geographically concentrated companies will likely be able to influence their energy prices.

- Calpine's predicted growth is predicated on its ability to construct and operate 70,000 MW of new gas-fired merchant power plants by 2005, with an operating margin of about 30%. Currently, the company has an interest in approximately 20,000 MW of capacity, and owns approximately 6,000 MW outright.[12] While the company has an excellent track record, this growth rate would nonetheless be 300-400%. Its annualized growth over the past several years has been 44%. Furthermore, 30% operating margins may attract new entry. Alternatively, the company's profit margins could face competition if its F-generation gas turbine power plants were made obsolete by a newer, lower-cost type of power plant.

- The ability to obtain sufficient inexpensive natural gas will be a priority for Calpine in the future. If Calpine succeeds in expanding to 70,000 MW, then it will consume approximately 10% of the natural gas in the North American market.[13] Charles Chambers, vice president of Calpine's business development, has stated that "Calpine is continuing to meet our goal of owning 25 percent of our natural gas requirements. By the end of 2005, we expect to generate over 70,000-megawatts of electricity. To meet our 25 percent reserve goal, Calpine anticipates increasing our equity reserves to 6.7 trillion cubic feet … Calpine will continue to acquire and develop reserves in strategic natural gas basins in North America to ensure Calpine is the low-cost producer in the markets we serve." [14]

- Calpine's stated target debt/capitalization leverage is 65%. If lease obligations and partial debt treatment of the convertible preferred stock are included, the leverage rises to 70%. Calpine will therefore be more exposed to energy price reductions than will power producers with less debt. One-third of Calpine's capacity is its merchant portfolio, which is highly exposed to price volatility such as that shown in California this past year. Even contracted prices will eventually expire, and be replaced with contracts at future market prices.[15]

- A factor which does not seem to be mentioned by analysts, but which appears to us to be an issue of concern, is the lack of a stated succession plan for Peter Cartwright. Mr. Cartwright is 71 years old, and has created the company from its inception. The company's valuation would be strengthened by a clearly defined succession plan, in our opinion.

[12] Standard and Poor's Ratings Direct, "Calpine Corporation", April 25, 2001
[13] Peter Cartwright, *Wall Street Transcript* interview, July 2001
[14] Calpine Corporation press release, July 10, 2000: www.BizYahoo.com/prnews
[15] Standard and Poor's Ratings Direct, "Calpine Corporation", October 3, 2001

## Projected 2001 Annual Operating Performance, Calpine Corporation

| Operating Performance | | | | | | |
|---|---|---|---|---|---|---|
| | 2000 | 2001 (6mo) | 2001E | 2000 | 2001 (6mo) | 2001E |
| **Growth** | | | | % of sales | % of sales | % of sales |
| Revenues | 2,283 | 2,843 | 4,800 | | | |
| COGS | 1,445 | 2,188 | 3,360 | 63.3% | 77.0% | 70.0% |
| SGAE | 94 | 99 | 182 | 4.1% | 3.5% | 3.8% |
| Depreciation | 154 | 207 | 901 | | | |
| EBIT | 590 | 348 | 357 | 25.8% | 12.2% | 7.4% |
| | | | | | | |
| Taxes | (219) | (133) | (125) | | | |
| Def. Taxes | 63 | 87 | 80 | 2.7% | 3.0% | 1.7% |
| NOPLAT | 433 | 302 | 312 | | | |
| | | | | | | |
| Delta WC | 1,302 | 3,783 | 4,729 | | | |
| Capex | 3,808 | 3,452 | 4,800 | 166.8% | 121% | 100.0% |
| Depr. | 154 | 207 | 710 | | | |

## Discounted Future Cash Flow Analysis

A discounted cashflow analysis was performed to determine a fair market valuation of Calpine. The revenues for Calpine were determined by projecting the growth of the company's revenues for a five year period. Since Calpine plans to increase their capacity threefold over the next five years, the revenues have been modeled accordingly.

Since Calpine has spent millions on increasing its power generating assets, the company is not expected to be cash flow positive until 2005. Capital expenditures are expected to decrease sequentially up until the year 2006 as its expansion plans come to fruition. The working capital requirements are expected to increase with the revenues year over year in modeling the cashflows. Depreciation is determined based on the company's current assets and their capital expenditures on an annual basis.

The company's weighted average cost of capital is calculated after determining its cost of equity and cost of debt. The company is a BBB rated company so the cost of debt is determined to have a spread of approximately 150 basis points over the risk free rate. The cost of equity is calculated using an unlevered industry beta levered to the expected long term capital structure of the firm. The optimal capital structure for Calpine is approximately 50/50 debt to equity. The levered beta is approximately .91, which is comparable to a beta determined from a linear regression comparing the S&P to the performance of Calpine. Using the firm's capital structure, the WACC is calculated to be 9.64%, which is the rate used to discount the expected free cash flows. The perpetual growth model with a growth rate of 3.5% is used to determine the terminal value of Calpine. Note that the terminal value makes up nearly all of the equity value of the firm.

## Free Cash Flow Valuation

| | 2001E | 2002E | 2003E | 2004E | 2005E | 2006E |
|---|---|---|---|---|---|---|
| **Growth** | | | | | | |
| Revenues | 4,800 | 50% | 50% | 30% | 25% | 10% |
| COGS | 70.0% | 70.0% | 68.0% | 66.0% | 64.0% | 64.0% |
| SGAE | 3.8% | 3.5% | 3.3% | 3.3% | 3.3% | 3.3% |
| **CAPEX** | 100.00% | 60.00% | 40.00% | 20.00% | 15.00% | 6.00% |
| **Working Capital Requirement** | | | | | | |
| Cash | 1,241 | | | | | |
| **WCR** | 4,729 | 0.50% | 0.50% | -0.50% | -1.50% | -2.50% |

| | 2001E | 2002E | 2003E | 2004E | 2005E | 2006E |
|---|---|---|---|---|---|---|
| Revenues | 4,800 | 7,200 | 10,800 | 14,040 | 17,550 | 19,305 |
| COGS | 3,360 | 5,040 | 7,344 | 9,266 | 11,232 | 12,355 |
| SGAE | 182 | 252 | 356 | 463 | 579 | 637 |
| Depreciation | 901 | 1,000 | 1,432 | 2,776 | 2,145 | 2,408 |
| EBIT | 357 | 908 | 1,668 | 1,534 | 3,594 | 3,905 |
| Taxes on EBIT | (125) | (318) | (584) | (537) | (1,258) | (1,367) |
| Deferred Taxes | 80 | 72 | 108 | 140 | 176 | 193 |
| NOPLAT | 562 | 1,298 | 2,359 | 2,212 | 5,027 | 5,464 |
| Depreciation | 901 | 1,000 | 1,432 | 2,776 | 2,145 | 2,408 |
| Delta WCR * | 4,729 | 4,765 | 4,819 | 4,749 | 4,485 | 4,003 |
| CAPEX | 4,800 | 4,320 | 4,320 | 2,808 | 2,633 | 1,158 |
| FCF | (8,066) | (6,787) | (5,348) | (2,569) | 54 | 2,711 |
| Continuation Value | | | | | | 45,741 |
| Discounted FCF | (8,066) | (6,787) | (5,348) | (2,569) | 54 | 48,453 |

| | |
|---|---|
| Present Value of FCF | 25,737 |
| Cash | 1,241 |
| Long Term Debt | 7,093 |
| **Equity Value** | **19,885** |
| Shares | 305,000 |
| **Price per Share** | **$ 65.20** |

| WACC Calculation | |
|---|---|
| Target D/E | 1.00 |
| Unlevered Beta | 0.65 |
| Levered Beta | 0.910 |
| Cost of Equity | 11.87% |
| Cost of Debt | 6.80% |
| WACC | 9.64% |

Notes:

1. Terminal Growth Rate: 3.50%
2. Market risk premium is 7%, taken from Ibbotson Associates 1926-1976.

## Sensitivity Analysis

A sensitivity analysis was performed to see the variation in stock price with changes in projected long term growth rate and weighted average cost of capital. With growth equal to long term economic growth, and the WACC approximately 10 percent with current long term interest rates, the stock price should be trading around $46 per share. Since the stock currently trades around $25 per share, we believe the stock is significantly undervalued in the current market. Therefore, we see very good upside potential based on the DCF analysis performed. Due to the current contraction in economic growth, we believe that the market is not assigning much value to Calpine's projected growth. The market has turned its focus toward value, and when Calpine begins to show that it can meet its goals, the company will be poised for significant gains.

| Sensitivity Analysis | | WACC | | | | |
|---|---|---|---|---|---|---|
| | | **8%** | **10%** | **12%** | **14%** | **16%** |
| Terminal Growth Rate | **1%** | 43.49 | 14.99 | -3.15 | -15.71 | -24.92 |
| | **3%** | 98.35 | 46.03 | 16.96 | -1.53 | -14.34 |
| | **5%** | 226.36 | 101.91 | 48.57 | 18.94 | 0.08 |
| | **7%** | 866.41 | 232.29 | 105.46 | 51.11 | 20.91 |

## Valuation Assessment

The following is a weighted average of Calpine's value per share given the probability of a deviation from the current revenue growth estimates. The weights are our estimates of the probability of annual revenue growth being higher or lower than our projections. The weighted average is nearly $80 per share.

| Valuation | Annual Revenue Growth Estimates | | | | |
|---|---|---|---|---|---|
| **Diff. from annual est.** | **-10%** | **-5%** | **0%** | **+5%** | **+10%** |
| **$/share** | - | - | 65.20 | 165.79 | 282.15 |
| **Probability** | 5% | 20% | 50% | 20% | 5% |
| **Share Price** | | | | | **$ 79.87** |

## Comparable Company Valuation

**Independent Power Producing Companies**

| Firm | Price | 52-week High | 52-week Low | Market Mkt. Cap ($M) | LTM EPS | Price/ Earnings | 2002 Proj. EPS | 2002 Proj. P/E | Price/ Book | ROE | Long term growth | PEG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AES | $ 12.82 | $ 72.81 | $ 12.00 | $ 6,824 | $ 1.30 | 9.86 | $ 1.62 | 7.91 | 1.21 | 11.5% | 30% | 0.33 |
| Calpine | $ 22.81 | $ 58.04 | $ 18.90 | $ 6,957 | $ 2.03 | 11.24 | $ 2.53 | 9.02 | 2.44 | 22.7% | 40% | 0.28 |
| Mirant | $ 21.90 | $ 47.20 | $ 19.25 | $ 7,455 | $ 1.97 | 11.12 | $ 2.57 | 8.52 | 1.65 | 12.5% | 23% | 0.48 |
| NRG | $ 16.21 | $ 37.70 | $ 13.10 | $ 3,218 | $ 1.37 | 11.83 | $ 1.69 | 9.59 | 1.57 | 13.1% | 25% | 0.47 |
| Orion | $ 25.50 | $ 34.00 | $ 15.60 | $ 2,639 | $ 1.17 | 21.79 | $ 1.56 | 16.35 | 1.72 | 4.6% | 25% | 0.87 |
| Reliant | $ 16.20 | $ 37.50 | $ 14.45 | $ 4,844 | $ 1.65 | 9.82 | $ 2.09 | 7.75 | 0.76 | 11.4% | 25% | 0.39 |

## Earnings Multiple Valuation

The following is an alternate method of pricing Calpine's stock, instead of the DCF (discounted future cash flows) method. This method bases the value of the stock on the projected 2002 earnings and various P/E multiples. This chart shows the sensitivity of Calpine's future stock price to several possible earnings surprises, at several possible Price/2002E Earnings multiples. As can be seen, even conservative estimates which predict a negative earnings surprise and a low P/E multiple result in a stock price that is higher than Calpine's current price.

**Price/Share based on Projected Earnings Multiples**

| | | 2002 Earnings Surprise | | | | |
|---|---|---|---|---|---|---|
| | | **-15%** | **-8%** | **0%** | **8%** | **15%** |
| **P/E Multiples** | **10** | 21.51 | 23.28 | 25.30 | 27.32 | 29.10 |
| | **15** | 32.26 | 34.91 | 37.95 | 40.99 | 43.64 |
| | **20** | 43.01 | 46.55 | 50.60 | 54.65 | 58.19 |
| | **25** | 53.76 | 58.19 | 63.25 | 68.31 | 72.74 |

### Investment Conclusion

We believe that Calpine is significantly undervalued at its current share price of $25.47. Based on our valuation analysis using a discounted cash flow model with probabilistic scenarios, we believe that the stock could trade up to the $80 range over the next two years. We also believe that within the next year, the stock should trade near the average S&P multiple of approximately 20 times earnings. Given our current earnings estimates for 2002, we believe that the stock should trade up to approximately $51 in the next twelve months.

We feel that our DCF analysis represents Calpine's current growth plans. Our DCF model's estimated growth rate is 50% for 2002-2003, falling to only 10% by 2006. This is in line with the growth predicted by Calpine management. We have therefore presented a probabilistic scenario table with variations in the company's growth rate to support our projected $80 price per share. Even our conservative estimates suggest that the price per share should be in the range of $50 to $65. We believe that the U.S. economy's current downturn will reverse itself at the end of this year, and Calpine will benefit from its massive capital spending program. The company has already locked in revenues for the coming years with long term contracts and is positioned to benefit from any increase in demand for electricity.

In the very near term we believe that the stock will trade in the $20 to $30 range, due to the current uncertainties in the economy and the threat of war. Over the next twelve months, as the current terrorist threats are resolved and the economy begins to show signs of improving, the stock should begin to move closer to our target price of $51. As a result, we believe that establishing a position in Calpine in the $20 to $30 range within the next two months would provide an attractive entry point for investors. We believe that an entry point in the $20 to $22 range is possible in the next two months as the economy finds a bottom.

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