McDep Associates
Stock Idea
August 6, 2001

Buy/Sell Rating: 4 – Sell

Calpine Corporation
Long Electric Generation, Short Natural Gas

Symbol	*Price ($/sh) 3-Aug 2001*	*Shares (mm)*	*Market Cap ($mm)*	*Net Present Value ($/sh)*	*Debt/ Present Value*	*McDep Ratio*	*EV/ Sales NTM*	*EV/ Ebitda NTM*	*P/E NTM*	*Div'd NTM (%)*	*PV/ Ebitda NTM*
CPN	36.67	318	11,700	9.90	0.69	1.84	2.6	13.0	20	-	7.0

McDep Ratio = **M**arket **c**ap and **De**bt to **p**resent value of oil and gas and other businesses
EV = Enterprise Value = Market Cap and Debt: $mm 18,600
Ebitda = Earnings before interest, tax, depreciation and amortization: $mm 1,436
NTM = Next Twelve Months Ended June 30, 2002; P/E = Stock Price to Earnings
PV = Present Value of energy businesses: $mm 10,100

Summary and Recommendation

We recommend that investors sell shares of Calpine Corporation because we fear that the company faces a cost squeeze as it attempts to own or contract for 10% of U.S. natural gas supply to fuel the generators it has already ordered. The company apparently is committed to buy so much equipment from General Electric and Siemens that it would own 7% of electric generation in the U.S. by the end of 2005 compared to 1% today. The company would then be consuming some 10% of U.S. natural gas supply compared to its ownership today of less than 1% of natural gas reserves. Something has to give and we fear it will be Calpine's stock price. Even after its recent decline, Calpine's stock is still up almost twenty fold since it started trading publicly in 1996. Meanwhile, sell recommendations are subject to economic, political, business and financial risk just as are buy recommendations.

The Scarcity Value of Electric Generation May Have Peaked

We admire individuals who anticipate trends and have the courage to act on their convictions. The leader of Calpine is such a person. He recognized that we would need new capacity to generate electricity and that it would be fueled by natural gas. His smartest move may have been to tie up orders for power generating equipment well ahead of Calpine's potential competitors.

Calpine's stock, in effect, has reflected the scarcity value of new generating equipment as Calpine beat rivals to placing orders. Yet the rivals are not to be denied, and have ordered new equipment also, thereby possibly boosting orders beyond normal needs.

Now Calpine's challenge is to monetize its stock market recognition before it fades, should the buildup in generating capacity reach the stage of temporary surplus. Theoretically the peak value of generating equipment could be locked in by contracts to sell electricity at a price that guarantees a fixed margin above the cost of gas. As we will explain, we do not believe that can be done in the magnitude that Calpine needs at anywhere near today's prices.

There Will Be Enough Natural Gas, But The Price May Be Higher

We're bulls on power and natural gas. In our opinion, electricity generated from natural gas is such a valuable product that it is worth much more. If the price goes up enough, the use of clean energy will be directed to those applications that can justify the higher price. We saw a preview of that last winter when aluminum plants shut down to free up electricity for those who were willing to pay more for it.

Natural gas is also worth much more. The only reason it sells at a price as low as today is that producers compete fiercely with each other. Meanwhile that competition has taken its toll, as it is increasingly difficult to maintain conventional gas production, much less increase it by a large amount in a short time. There is likely to be a temporary period during which natural gas supply is tight until big projects like Arctic gas and imported liquefied natural gas can be implemented. As a result during the next few years natural gas pricing may be unusually strong in order to discourage uneconomic consumption and assure that high value users can get continued supply.

When the largest buyer is over extended, it can have an exaggerated impact in a free market. Participants may sense a large player's vulnerability and start to front run, or trade ahead, of the exposed party. Apparently, it happened in the rapid demise of Long Term Capital Management in bond trading. Apparently it was also the case with the monumental losses of Metallgesellschaft in the heating oil market.

The Expansion of Electric Capacity is Extraordinary

The demand for electricity to fuel information technology seemed to catch many by surprise. As power generators saw increasing demand, they could extrapolate requirements for new capacity. McGraw Hill documents new plans for plants over three years that total 21% of current capacity. With no apparent letup in announcements, the trends point to an increment of 30% over five years, one fifth of that accounted for by Calpine.

Almost all of the new capacity would be fueled by natural gas. If Calpine alone would account for 10% of gas consumption in 2005 the requirements for the whole electric industry would exceed the most optimistic forecasts.

New Capacity May Operate at a Lower Than Expected Rate

The reconciliation of abundant electric capacity and tight natural gas supply, in our opinion, will be more downtime for new generators and moderately high price for natural gas. Both of those pressures are in the wrong direction for a company long on new generators and short on fuel supply.

Contracts Are Imperfect Protection

Some of the power producers tell us that only the "spark spread" is important. The protected power producer would sell power at the cost of fuel plus a margin for generation. Indeed business is transacted on that basis.

Ultimately most buyers would like protection on the cost of fuel. Unfortunately the history of long term fixed price contracts in energy is so sorry that no sizeable natural gas producer will sell on that basis.

Yet power producers will say that they do have long-term contracts. That may mean a commitment to deliver volumes, but not at a fixed price. The price is likely to be indexed to market prices.

Or the "contract" may be with a financial intermediary, perhaps a large bank, or a brokerage house. How many trillion dollars of such paper obligations does such an intermediary have outstanding? A well-known hedge fund that made prolific use of such "contracts" found that none other than the Federal Reserve Bank stepped in to inspire a takeover of the fund when "unusual" market conditions developed. Truth is, one failure in a daisy chain of financial transactions can threaten the whole. As a result, contracts with financial intermediaries are only good in normal market conditions or for small amounts.

Or maybe the contract is with a state government, like California. When the current conditions favor the state, it holds the seller to the terms. When market conditions turn in favor of the seller, the state reneges. Those may sound like harsh words, but they are etched in the minds of natural gas producers and pipelines throughout Canada and the U.S. Power producers are now seeing the same.

The Best Contract is to Own the Resource

Whether it is recognizing the limitations of contracts or the potential attractiveness of the natural gas business, Calpine management has a goal to own 25% of the reserves needed to fuel its plants. The company bought somewhat more than a trillion cubic feet in 2001 on the way to 6.7 trillion cubic feet by 2005.

To meet the rest of its goal it needs to buy the equivalent of a Burlington Resources. The timing might never be better than the present. Natural gas is down; Calpine still has a high stock market valuation. The downside is that investors might not support a bid that essentially exposes Calpine's vulnerability for all to debate.

To be fully covered, Calpine needs to buy almost four companies the size of Burlington Resources. That illustrates the magnitude of the problem. It can't be fully solved. It's the dilemma of every refiner and pipeline. It might be nice to own all the production behind the refinery or pipeline, but it is not practical.

Old Capacity May Be More Profitable

Higher generating costs driven by higher natural gas price is also favorable for deregulated, low cost generators that use coal or nuclear power. The higher cost new capacity fueled by gas makes the lower cost old capacity more valuable and deregulation allows the owners of old capacity to profit. Therefore another option for Calpine may be to use its higher valued stock to acquire low cost generating assets.

Own What Calpine Needs to Own Rather Than Own Calpine

There must be many smart people at Calpine. The company has an admirable record. Perhaps management will be successful in steering the company through the shoals of a volatile commodity business.

Critical to Calpine's future is the support of lenders and investors. Calpine is a good client for equipment suppliers and investment banks; the company generates lots of activity that translate to profits and fees for others. It has also been a great stock. Investors feel good about their big gains.

Now Calpine needs to hedge against a temporary period of overcapacity in natural gas fired generation. The alternative is to stick to generation alone and ride out the ups and downs. That is not all bad. There is merit to management concentrating on what it knows. Some investors may be content to ride out the uncertainties as well.

Those investors who seek a better balance of risk and reward can buy shares in Calpine's potential targets. Buying a target may even be an indirect way of buying Calpine stock at a more favorable price if Calpine actually acquires the target.

The Stock May Be An Inverse Play on Natural Gas Price

Just as we have discussed how the higher natural gas price we expect may be disadvantageous for Calpine, a low gas price could be highly advantageous. A low gas price would make natural gas fired generation very competitive. The units would run long hours spewing high profits for the generator.

Of course we have had low natural gas prices for a long time. That is what has given power producers the confidence to expand so aggressively. Over expand, some would say.

Meanwhile Calpine stock is already off sharply from its high. Should natural gas be temporarily weak in the next few months, Calpine stock may recover. Yet because of high financial leverage and the huge stock price move upward Calpine has enjoyed, there could readily be more downside from here.

Financial Leverage is High

The company has financed its growth with a debt/capital ratio of 65%. Our ratio of Debt to Present Value at 0.69 is nearly the highest of companies in our coverage. We think investors should look at the amount of Present Value in a holding rather than market capitalization when deciding the size of a position in a particular stock. Since a Sell rating is relevant only for an investor who already owns the stock, our recommended weighting is meaningful only to that rare investor who might sell short.

We would weight Calpine equity at slightly less than half a normal position considering the company's high leverage. In Calpine's case with a Debt/PV of 0.69, $0.31 of equity, or net present value, controls $1.00 of PV. We assume a Debt/PV ratio of 0.35 is normal. In that case $0.65 of equity controls $1.00 of present value. As a result we need only weight Calpine stock at 31/65 of what we would weight a normal equity position, long or short.

Growth in Profits Might Be Questioned

Our financial projection for the Next Twelve Months is in line with the momentum of recent quarterly reports (see table). Our skepticism about future profitability makes us skeptical of the meaning of current results.

Calpine Corporation
Next Twelve Months Results

	Year 2000	*Q1 3/31/01*	*Q2 6/30/01*	*Q3E 9/30/01*	*Q4E 12/31/01*	***Year 2001E***	*Q1E 3/31/02*	*Q2E 6/30/02*	***Next Twelve** Months 6/30/02*
Revenue ($mm)	**2,547**	1,400	1,613	2,600	1,400	**7,013**	1,500	1,700	**7,200**
Expense	**1,626**	1,111	1,291	2,081	1,121	**5,605**	1,201	1,361	**5,764**
Ebitda	**921**	289	322	519	279	**1,408**	299	339	**1,436**
Deprec., Deplet., & Amort.	**312**	78	72	72	72	**294**	72	72	**288**
Other non-cash items						**-**			-
Ebit	**609**	211	250	447	207	**1,114**	227	267	**1,148**
Interest	**35**	35	59	59	59	**212**	59	59	**236**
Ebt	**574**	176	191	388	148	**902**	168	208	**912**
Income Tax	**201**	61	67	136	52	**316**	59	73	**319**
Net Income ($mm)	**373**	114	124	252	96	**587**	109	135	**593**
Shares (millions)	**311**	317	318	318	318	**318**	318	318	**318**
Per share ($)	**1.20**	0.36	0.39	0.79	0.30	**1.85**	0.34	0.43	**1.87**
Ebitda margin	**36%**	21%	20%	20%	20%	**20%**	20%	20%	**20%**
Interest Rate (%/yr)		2%	3%						
Tax rate	**35%**	35%	35%	35%	35%	**35%**	35%	35%	**35%**

The Stock Has Valuation Risk

Calpine stock has a high McDep Ratio (see Table L-1). While the denominator of the McDep Ratio is subjective, the stock's high ratio of Enterprise Value to Ebitda (cash flow) is straightforward (see Table L-2). Successful companies can justify high valuation. In Calpine, the questions are too large in our mind. We could not recommend purchase of the stock with any confidence. We are uncomfortable recommending sale of a respectable company, but if forced to choose one of the stocks in our coverage to sell, it would be Calpine.

Kurt H. Wulff, CFA

Table L-1

Mega Cap and Large Cap Energy Companies

Rank by McDep Ratio: Market Cap and Debt to Present Value

	Symbol/ Rating		Price ($/sh) 3-Aug 2001	Shares (mm)	Market Cap ($mm)	Net Present Value ($/sh)	Debt/ Present Value	McDep Ratio
Mega Cap								
Exxon Mobil Corporation	XOM		41.26	7,020	290,000	37.10	0.09	1.10
BP PLC	BP		49.11	3,720	183,000	48.90	0.17	1.00
TOTAL Fina Elf S.A.	TOT		70.55	1,400	99,000	72.00	0.16	0.98
Royal Dutch/Shell	RD		55.49	3,580	199,000	60.80	0.09	0.92
Chevron (incl. Texaco)	CHV		90.68	1,060	96,100	103.40	0.15	0.90
Total or Median					*867,000*		*0.15*	*0.98*
Power								
Calpine Corporation	CPN	4	36.67	318	11,700	9.90	0.69	1.85
Enron Corp.	ENE		45.36	891	40,400	15.00	0.69	1.63
Dynegy Inc.	DYN		46.99	338	15,900	20.60	0.56	1.57
Mirant Corporation	MIR		33.85	353	11,900	12.70	0.73	1.45
Duke Energy Corporation	DUK		39.90	779	31,100	19.90	0.62	1.38
AES Corporation	AES		38.97	538	21,000	17.40	0.71	1.36
El Paso Corporation	EPG		51.25	521	26,700	30.00	0.57	1.30
Williams Companies	WMB		33.51	485	16,300	16.60	0.69	1.31
American Electric Power Co. Inc.	AEP	2	46.30	324	15,000	25.90	0.73	1.21
Southern Company	SO		24.20	683	16,500	16.90	0.54	1.20
Exelon Corporation	EXC	2	58.71	324	19,000	55.30	0.51	1.03
Total or Median					*226,000*		*0.69*	*1.36*
Natural Gas and Oil								
Anadarko Petroleum Corp.	APC		56.01	263	14,700	66.30	0.24	0.88
Occidental Petroleum	OXY		27.30	370	10,100	35.60	0.46	0.87
Phillips (incl. Tosco)	P		56.66	383	21,700	75.90	0.31	0.82
Burlington Resources, Inc	BR	1	41.64	215	9,000	54.90	0.17	0.80
Conoco Inc.	COC.B		29.95	623	18,700	48.00	0.21	0.70
ENI S.p.A.	E		61.00	800	48,800	91.90	0.10	0.70
Total or Median					*123,000*		*0.22*	*0.81*
Service								
Schlumberger Ltd.	SLB		52.02	581	30,200	37.70	0.14	1.33
Halliburton Company	HAL		35.16	430	15,100	27.20	0.13	1.25

Buy/Sell rating after symbol: 1 - Strong Buy, 2 - Buy, 4 - Sell
McDep Ratio = **M**arket **c**ap and **De**bt to **p**resent value of oil and gas and other businesses

Table L-2

Mega Cap and Large Cap Energy Companies

Rank by EV/Ebitda: Enterprise Value to Earnings Before Interest, Tax, Deprec.

	Symbol		*Price ($/sh) 3-Aug 2001*	*EV/ Sales 2001E*	*EV/ Ebitda NTM*	*P/E NTM*	*Dividend or Distribution NTM (%)*	*PV/ Ebitda NTM*
Mega Cap								
Exxon Mobil Corporation	XOM		41.26	1.4	7.7	15	2.1	7.0
BP PLC	BP		49.11	1.2	7.0	11	2.9	7.0
TOTAL Fina Elf S.A.	TOT		70.55	1.1	6.9	16	1.6	7.0
Royal Dutch/Shell	RD		55.49	1.4	6.4	14	2.5	7.0
Chevron (incl. Texaco)	CHV		90.68	1.0	5.4	10	2.9	6.0
Median				*1.2*	*6.9*	*14*	*2.5*	*7.0*
Power								
Enron Corp.	ENE		45.36	0.3	16.3	23	1.1	10.0
Dynegy Inc.	DYN		46.99	0.4	14.1	22	0.6	9.0
Calpine Corporation	CPN	4	36.67	2.6	13.0	20	-	7.0
Mirant Corporation	MIR		33.85	0.7	11.6	16	-	8.0
Duke Energy Corporation	DUK		39.90	0.9	11.1	15	2.8	8.0
AES Corporation	AES		38.97	3.9	10.9	18	-	8.0
Williams Companies	WMB		33.51	3.4	10.5	15	1.8	8.0
El Paso Corporation	EPG		51.25	0.7	9.1	16	1.7	7.0
American Electric Power Co. Inc.	AEP	2	46.30	0.7	8.5	13	5.2	7.0
Southern Company	SO		24.20	2.8	8.4	15	5.5	7.0
Exelon Corporation	EXC	2	58.71	2.5	7.2	13	2.9	7.0
Median				*0.9*	*10.9*	*16*	*1.7*	*8.0*
Natural Gas and Oil								
Burlington Resources, Inc	BR	1	41.64	4.5	7.2	32	1.3	9.0
Phillips (incl. Tosco)	P		56.66	0.8	5.8	9	2.5	7.0
Occidental Petroleum	OXY		27.30	1.3	5.2	8	3.7	6.0
Anadarko Petroleum Corp.	APC		56.01	2.3	5.3	9	0.4	6.0
Conoco Inc.	COC.B		29.95	0.6	4.2	8	2.5	6.0
ENI S.p.A.	E		61.00	1.1	3.5	6	2.6	5.0
Median				*1.2*	*5.3*	*9*	*2.5*	*6.0*
Service								
Halliburton Company	HAL		35.16	1.2	10.0	24	1.4	8.0
Schlumberger Ltd.	SLB		52.02	2.7	9.3	26	1.4	7.0

EV = Enterprise Value = Market Cap and Debt; Ebitda = Earnings before interest, tax, depreciation and amortization; NTM = Next Twelve Months Ended March 31, 2002; P/E = Stock Price to Earnings; PV = Present Value of oil and gas and other businesses