

## Meter Reader

A Weekly Analysis of Energy Stocks Using the McDep Ratio

February 13, 2003

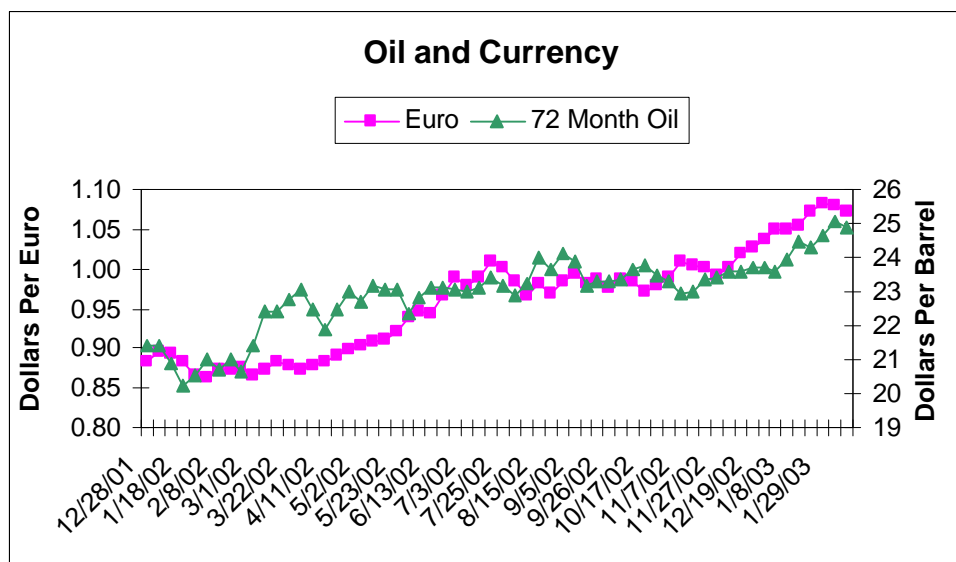
# Currency and TIPS Support Energy Investment

## Summary and Recommendation

Energy stocks, helped partially by a cold winter, are better long-term investments, in our opinion, than widely perceived. First, energy producer stocks are likely to provide inflation protection that we believe should be investors' primary concern today. Second, we recommend only low, or moderate, debt energy stocks in case we are surprised by a bout of deflation that would drive high debt stocks to bankruptcy. Third, real growth is likely to be tough to achieve for the next several years, but we believe energy producers who harvest valuable existing resources while reinvesting only carefully and/or paying back investors can achieve real growth on a rate of return basis. We see a seemingly contradictory opportunity to enhance deflation resistance by complementing an energy portfolio with Treasury Inflation Protected Securities. Meanwhile our conviction on our sell recommendations is enhanced by the recent news regarding management changes and debt ratings at the high greed general partner of **El Paso Energy Partners (EPN)** (see Tables L-1, L-2, M-1, M-2, S-1, S-2).

## Long-Term Oil Price Nearly Constant in Euros

While spot crude oil is \$36 a barrel, one-year crude oil is only \$31 and six-year oil is only \$25. Energy stocks are attractive investments on that six-year level, or less, in our opinion. Six-year oil is up about 20% from \$21 a year ago. Yet, the Euro is also up more than 20% over the same time (see Chart). In other words, the U.S. dollar has lost value in purchasing terms outside of the home country. Investors in oil as a commodity have been protected from the loss of international purchasing power of the dollar.



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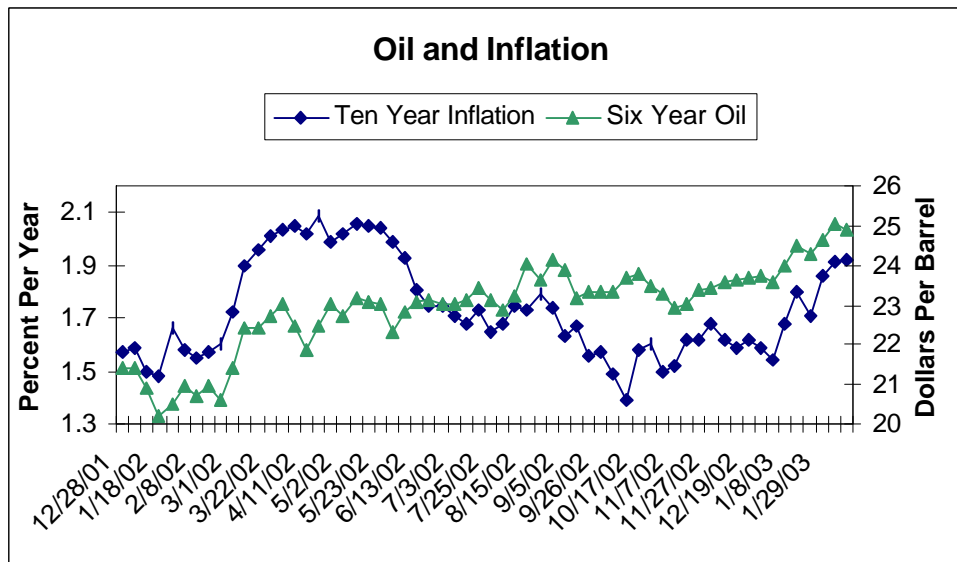
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Ironically, European energy stocks like **Total (TOT)**, **Norsk Hydro (NHY)** and recommended **Royal Dutch (RD)** have been weak in 2003. We can think of rationalizations, but none are convincing. RD at a yield of 4.4% or more continues to appear attractive. While we do not happen to be emphasizing TOT and NHY now we do own shares in them as a result of recommendations from a decade ago.

### Oil Price Keeping Ahead of Advancing Inflation Expectations

Since the U.S. Treasury's auction of Ten-Year Inflation-Indexed Notes (TIIN) at the beginning of the year, the real yield quoted for the Ten-Year TIIN has dropped to under 2% per year. At the same time, the yield on the totally fixed rate, conventional Ten-Year Note (TN) has remained practically flat around 4% per year. The difference between the two quotes is a market measure of Ten-Year inflation expectations (IX).

Last spring when IX started a run from 1.5% per year to 2.1% per year, it coincided with an upward move in oil price (see Chart). IX declined by a nearly equal amount during the deflation scare from June to October last year. Now as IX is advancing again, oil is also.



### Inflation Expectations May Be Starting a Long Upswing

Historical inflation for the past 90 years was 3.1% per year compared to the recent low of 2.1% in 2001. Consumer Price Index inflation was 2.4% in 2002. On the basis of history we are probably headed for higher inflation than we are currently experiencing. Next we look further at the historical details.

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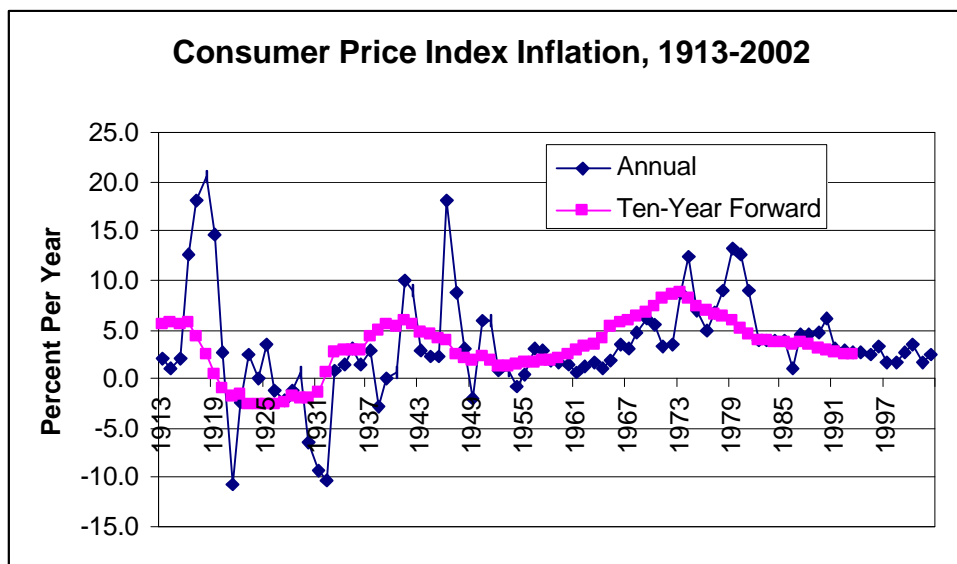
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Only for the past five years or so have we had Treasury Inflation Protected Securities (TIPS) of which TIIN are those with a maximum maturity of ten years. Thus, only recently have investors had such a readily available measure of inflation expectations.

Not to be daunted, we constructed a history of inflation expectations assuming the actual inflation that ensued. Downloading historical data from the Bureau of Labor Statistics we calculate annual increases in the Consumer Price Index, the measure used by the Federal Reserve to calculate income and principal payments on TIPS, back to 1913. Then we pretend that investors had perfect foresight and therefore knew what ten-year forward inflation would be. To get IX for 1913, for example, we measured actual inflation from 1913 through 1922. The results define broad swings (see Chart).



Of course, the last year for which we have a history of what forward inflation turned out to be was 1993 when the ten-year forward number theoretically was 2.5% per year. Today the TIPS market gives us a continuous reading of expectations. Ten-Year IX reached a low last year of 1.4% per year and is now approaching 2.0% per year. We may be starting a new long upswing though like any projection, the true results cannot be known in advance.

### TIPS a Diversifier for Deflation Resistance

Originally interested in TIPS for the reading on IX, we see upon further analysis that not only do TIPS provide inflation protection, but also they provide most of the deflation resistance of fixed rate treasury securities.

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Comparing the Ten-Year TIIN with the Ten-Year TN we focus further on the Ten-Year IX that is the only difference between the two securities. To use round numbers the TN is priced to yield 4% per year under any inflationary outlook. The TIIN is price to yield 2% per year adjusted for inflation. If IX is 2% per year the return from the two securities will be practically identical.

Testing for different assumptions for IX we find that for positive inflation rates the return on TIIN varies directly, i.e. if IX is 6% instead of 2%, the return on TIIN is 8% instead of 4%. For negative rates of IX, i.e. deflation, there is a free lunch. The Treasury assures investors that TIIN will always be redeemed at par without any downward adjustment for deflation. Semiannual interest payments are adjusted downward for deflation, but when the payment is at a low level it does not affect total return by much. Thus if IX is minus 2%, the return on TIIN is still positive at almost 2%.

Now let's get to the frequency distribution and calculate the expected return on TIIN. From ninety years of inflation history we see that IX was negative only 15% of the time and the median for that bracket was minus 2%. IX was between 0% and 4% for 45% of the time and the median for that bracket was 2.5%. IX was more than 4% for 40% of the time and the median for that bracket was 5.7%. Returns for TIIN for the three brackets would be plus 2%, 4.5% and 7.7%. Taking the weighted average gives an expected IX of 5.4%. That beats the 4% on TN and thus we conclude TIIN is the more attractive security.

The free lunch is worth about 0.3% in return if IX conforms to the probability distribution we just used. If one wants to be more pessimistic and look for a higher probability of deflation, then the free lunch of downside protection becomes more valuable. In that case TIPS become a nice diversifier for an energy portfolio because their presence strengthens deflation resistance. In contrast to TIN, that deflation resistance comes at no diminution of inflation protection.

### **IX Can Kill Returns if Uncontrolled**

Having reconstructed IX on a historical basis it was a small step to add interest rates and to calculate implied real returns for ten-year securities. Because the Fed did not always offer securities of that maturity there are gaps in the interest rate data. For the 1930s we approximated Nominal Yield by the weighted average of short term and long-term. Real Yield is the difference between Nominal Yield and Forward Inflation (see Chart).

The startling implication of the historical analysis is how much real yield dipped into negative territory in the difficult 1930s and 1970s. Investors probably thought they were making money in price appreciation on bonds as nominal yields declined, but they lost a bundle if they held to maturity and suffered the full IX. Similarly we are accustomed to thinking of the 1930s as a deflationary period. On an IX basis, that was only true until

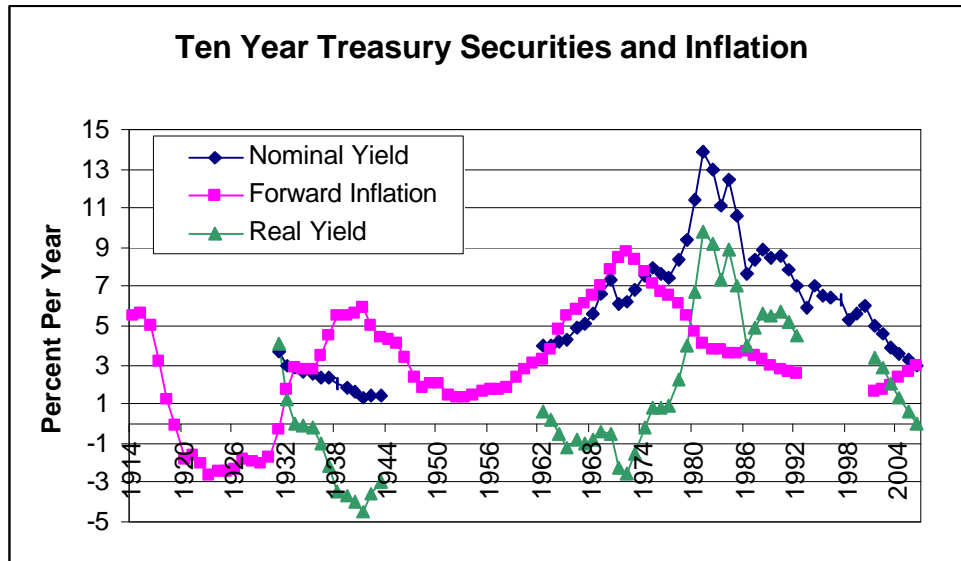
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1932 after which IX appeared to increase with a vengeance. Had there been TIIN in the 1930s they might have been huge moneymakers in price gain judging from the sharp decline in real yield. Apparently inflation indexed securities were actually illegal for a time.



Conventional bonds were losers throughout the 1970s, at least on a price basis judging from the steeply rising yield trend. On a price basis TIIN might have been winners through 1973 only to join conventional bonds in sharp advances in yield thereafter.

Despite the differences with respect to the lows in 1932 and 1974, in both the 1930s and the 1970s, real yields turned negative for several years after the peaks in the stock market in 1929 and around 1966. Negative real yields imply difficult conditions for investment and economic growth.

Markets seem to be pointing to lower real yields and a difficult investment environment for the next few years. Taking forward inflation numbers from the TN/TIIN markets for 2001 to 2002, we project possible trends for 2003 to 2006. Not that we pretend to know what will happen, we illustrate a continuation of the recent decline in real yields while inflation turns up and nominal yields decline moderately.

Kurt H. Wulff, CFA

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**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) 12-Feb 2003	Shares (mm)	Market Cap (\$mm)	Net Present Value (\$/sh)	Debt/ Present Value	McDep Ratio
<b>Mega Cap</b>							
Exxon Mobil Corporation	XOM	32.70	6,787	222,000	37.00	0.09	0.89
BP plc	BP	37.70	3,735	141,000	52.00	0.14	0.76
TotalFinaElf S.A.	TOT	62.50	1,336	83,500	90.00	0.15	0.74
Royal Dutch/Shell	RD B	38.58	3,481	134,000	60.00	0.15	0.70
ChevronTexaco Corporation	CVX B	63.08	1,062	67,000	101.00	0.17	0.69
<i>Total or Median</i>				648,000		0.15	0.74
<b>Energy Infrastructure</b>							
Southern Company	SO	27.71	701	19,400	23.90	0.47	1.08
Duke Energy Corporation	DUK	13.96	822	11,500	15.00	0.73	0.98
American Electric Power Co. Inc.	AEP N	19.94	326	6,500	27.40	0.74	0.93
Enel S.p.a. (32%)	EN	27.70	388	10,800	32.70	0.39	0.91
Dominion Resources	D	52.76	269	14,200	76.20	0.45	0.83
Exelon Corporation	EXC N	46.83	323	15,100	70.80	0.45	0.81
El Paso Corporation	EP N	3.65	590	2,200	20.00	0.66	0.72
<i>Total or Median</i>				60,000		0.56	0.87
<b>Natural Gas and Oil</b>							
Occidental Petroleum Corp.	OXY	28.80	380	11,000	35.00	0.36	0.89
Encana Corporation	ECA B	30.86	470	14,500	38.00	0.27	0.86
OAOLukoil	LUKOY	59.05	299	17,700	70.00	0.08	0.86
ENI S.p.A.	E	71.50	776	55,500	90.00	0.17	0.83
Devon Energy	DVN	45.30	158	7,200	65.00	0.42	0.83
Burlington Resources	BR B	43.80	202	8,800	60.00	0.26	0.80
Unocal Corporation	UCL	26.25	245	6,400	40.00	0.37	0.78
Anadarko Petroleum Corp.	APC	42.24	258	10,900	60.00	0.25	0.78
ConocoPhillips	COP B	47.88	680	32,600	75.00	0.36	0.77
Marathon Oil Corporation	MRO B	21.69	310	6,700	40.00	0.37	0.71
Petroleo Brasileiro S. A.	PBR N	14.32	1,086	15,600	30.00	0.27	0.62
<i>Total or Median</i>				176,000		0.27	0.79
<b>Service</b>							
Baker Hughes Inc.	BHI	30.69	339	10,400	25.00	0.09	1.21
Halliburton Company	HAL	19.30	434	8,400	22.00	0.25	0.91
Schlumberger Ltd.	SLB	38.37	581	22,300	44.00	0.22	0.90

Buy/Sell rating after symbol: B - Buy, N - Neutral, S - Sell

McDep Ratio = Market cap and Debt to present value of oil and gas and other businesses

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**Table L-2**  
**Mega Cap and Large Cap Energy Companies**  
**Rank by EV/Ebitda: Enterprise Value to Earnings Before Interest, Tax, Deprec.**

	Symbol/ Rating	Price (\$/sh) 12-Feb 2003	EV/ Sales NTM	EV/ Ebitda NTM	P/E NTM	Dividend or Distribution NTM (%)	PV/ Ebitda NTM	
<b>Mega Cap</b>								
Exxon Mobil Corporation	XOM	32.70	1.1	7.9	16	2.8	8.9	
BP plc	BP	37.70	0.9	6.6	14	3.8	8.6	
TotalFinaElf S.A.	TOT	62.50	1.1	6.5	12	4.1	8.8	
Royal Dutch/Shell	RD	B	38.58	0.9	6.0	12	4.4	8.6
ChevronTexaco Corporation	CVX	B	63.08	0.9	5.7	12	4.4	8.2
	<i>Median</i>		<i>0.9</i>	<i>6.5</i>	<i>12</i>	<i>4.1</i>	<i>8.6</i>	
<b>Energy Infrastructure</b>								
Southern Company	SO	27.71	3.4	9.8	16	4.8	9.0	
Duke Energy Corporation	DUK	13.96	2.3	9.4	10	7.9	9.6	
American Electric Power Co. Inc.	AEP	N	19.94	0.5	8.4	7	12.0	9.0
Enel S.p.a. (32%)	EN	27.70	2.2	8.2	33	5.8	9.0	
Dominion Resources	D	52.76	3.1	7.5	11	4.9	9.0	
Exelon Corporation	EXC	N	46.83	2.2	7.3	10	3.8	9.0
El Paso Corporation	EP	N	3.65	2.0	5.5	2	23.8	7.7
	<i>Median</i>		<i>2.2</i>	<i>8.2</i>	<i>10</i>	<i>5.8</i>	<i>9.0</i>	
<b>Natural Gas and Oil</b>								
ConocoPhillips	COP	B	47.88	0.7	5.7	9	3.3	7.4
ENI S.p.A.	E	71.50	1.5	5.5	11	5.1	6.7	
Encana Corporation	ECA	B	30.86	2.2	5.1	10	0.8	6.0
Anadarko Petroleum Corp.	APC	42.24	3.3	4.7	8	0.9	6.0	
Burlington Resources	BR	B	43.80	3.4	4.6	9	1.3	5.8
Occidental Petroleum Corp.	OXY	28.80	2.2	4.5	6	3.6	5.1	
Marathon Oil Corporation	MRO	B	21.69	0.4	4.3	6	4.2	6.0
Devon Energy	DVN	45.30	2.6	4.2	6	0.4	5.1	
Unocal Corporation	UCL	26.25	2.0	4.2	8	3.0	5.4	
OAo Lukoil	LUKOY	59.05	1.5	3.5	7	1.8	4.1	
Petroleo Brasileiro S. A.	PBR	N	14.32	1.2	3.1	3	9.4	4.9
	<i>Median</i>		<i>2.0</i>	<i>4.5</i>	<i>8</i>	<i>3.0</i>	<i>5.8</i>	
<b>Service</b>								
Baker Hughes Inc.	BHI	30.69	2.2	13.0	37	1.5	10.8	
Halliburton Company	HAL	19.30	1.0	8.2	17	2.6	9.0	
Schlumberger Ltd.	SLB	38.37	2.1	8.0	28	2.0	8.9	

EV = Enterprise Value = Market Cap and Debt; Ebitda = Earnings before interest, tax, depreciation and amortization; NTM = Next Twelve Months Ended December 31, 2003; P/E = Stock Price to Earnings; PV = Present Value of oil and gas and other businesses

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<b>Energy Infrastructure</b>							
Kinder Morgan Energy Partners, L.P.	KMP S	34.55	141	4,900	14.00	0.47	1.77
Kinder Morgan Management, LLC	KMR S	30.56	40	1,200	14.00	0.47	1.62
Kinder Morgan, Inc.	KMI S	45.13	123	5,500	14.00	0.80	1.43
Constellation Energy Group	CEG	25.56	164	4,200	20.00	0.69	1.09
Calpine Corporation	CPN N	3.07	375	1,200	1.00	0.97	1.06
Williams Companies	WMB	2.80	521	1,500	1.00	0.97	1.05
Dynegy Inc.	DYN	1.82	418	800	1.00	0.94	1.05
AES Corporation	AES	2.83	543	1,500	1.00	0.98	1.04
Sempra Energy	SRE	22.64	207	4,700	24.30	0.64	0.98
Valero Energy Corporation	VLO	36.75	115	4,200	40.00	0.60	0.97
CMS Energy Corporation	CMS	4.36	137	600	8.70	0.90	0.95
Mirant Corporation	MIR	1.61	413	700	4.00	0.86	0.91
<i>Total or Median</i>				<i>31,000</i>		<i>0.83</i>	<i>1.05</i>
<b>Natural Gas and Oil</b>							
Petro-Canada	PCZ	33.46	262	8,800	31.00	0.11	1.07
Murphy Oil Corporation	MUR	41.96	92	3,900	41.00	0.24	1.02
Suncor Energy	SU	17.06	454	7,800	17.00	0.25	1.00
Ocean Energy, Inc.	OEI	18.40	178	3,300	20.00	0.30	0.94
XTO Energy Inc.	XTO B	23.71	125	3,000	26.00	0.25	0.93
Imperial Oil Limited (30%)	IMO	30.16	114	3,400	33.00	0.13	0.93
CNOOC Limited (19%)	CEO B	26.63	78	2,080	33.00	-	0.81
Norsk Hydro ASA (49%)	NHY	40.31	126	5,100	54.00	0.18	0.79
PetroChina Company Ltd (10%)	PTR B	21.33	176	3,800	30.00	0.17	0.76
<i>Total or Median</i>				<i>41,200</i>		<i>0.18</i>	<i>0.93</i>
<b>Coal Producers (Small Cap)</b>							
Penn Virginia Res. Part, L.P.	PVR	23.25	15	400	18.00	-	1.31
Consol Energy Inc.	CNX	15.48	79	1,200	5.00	0.88	1.24
Peabody Energy	BTU	26.50	55	1,500	18.00	0.75	1.12
Alliance Res. Part, L.P.	ARLP	22.81	16	400	20.00	0.45	1.07
Arch Coal	ACI	17.10	48	800	18.00	0.61	0.98
Fording Inc (US\$)	FDG	21.94	52	1,100	23.00	0.04	0.96
Massey Energy	MEE	7.88	75	600	18.00	0.37	0.65
				<i>6,000</i>		<i>0.45</i>	<i>1.07</i>

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	Symbol/ Rating	12-Feb 2003	NTM	NTM	P/E NTM	NTM (%)	NTM		
<b>Energy Infrastructure</b>									
	Kinder Morgan Energy Partners, L.P.	KMP	S	34.55	3.2	15.4	18	7.2	8.7
	Kinder Morgan Management, LLC	KMR	S	30.56	2.9	14.1	16	8.2	8.7
	Kinder Morgan, Inc.	KMI	S	45.13	3.2	12.1	14	1.3	8.4
	Calpine Corporation	CPN	N	3.07	1.8	10.8			10.2
	Constellation Energy Group	CEG		25.56	2.8	9.9	10	3.8	9.2
	Williams Companies	WMB		2.80	1.9	9.4		-	9.0
	Dynegy Inc.	DYN		1.82	0.2	9.4		-	9.0
	AES Corporation	AES		2.83	2.8	9.4			9.0
	Sempra Energy	SRE		22.64	2.5	8.8	8	4.4	9.0
	CMS Energy Corporation	CMS		4.36	1.2	8.6	2	16.5	9.0
	Mirant Corporation	MIR		1.61	0.4	8.2	1	-	9.0
	Valero Energy Corporation	VLO		36.75	0.4	7.6	9	1.1	7.8
	<i>Median</i>				2.2	9.4	10	2.5	9.0
<b>Natural Gas and Oil</b>									
	Suncor Energy	SU		17.06	3.6	10.9	24	1.3	10.8
	Petro-Canada	PCZ		33.46	2.0	7.9	21	0.8	7.4
	Imperial Oil Limited (30%)	IMO		30.16	1.2	7.5	15	1.8	8.1
	Ocean Energy, Inc.	OEI		18.40	4.4	7.4	31	0.9	7.8
	Murphy Oil Corporation	MUR		41.96	1.1	6.8	19	1.9	6.7
	XTO Energy Inc.	XTO	B	23.71	4.1	5.4	10	0.2	5.8
	CNOOC Limited (19%)	CEO	B	26.63	3.6	4.6	9	2.4	5.7
	PetroChina Company Ltd (10%)	PTR	B	21.33	1.7	3.9	8	6.0	5.1
	Norsk Hydro ASA (49%)	NHY		40.31	0.7	3.8	11	2.6	4.8
	<i>Median</i>				2.0	6.8	15	1.8	6.7
<b>Coal Producers (Small Cap)</b>									
	Consol Energy Inc.	CNX		15.48	2.0	12.1	35	3.6	9.7
	Penn Virginia Res. Part, L.P.	PVR		23.25	8.7	11.2	13	8.6	8.6
	Peabody Energy	BTU		26.50	1.6	10.0	22	1.5	9.0
	Arch Coal	ACI		17.10	1.4	8.8	96	1.3	9.0
	Fording Inc (US\$)	FDG		21.94	2.0	8.6	20	1.8	9.0
	Alliance Res. Part, L.P.	ARLP		22.81	1.2	7.5	19	8.8	7.0
	Massey Energy	MEE		7.88	1.0	5.8	197	2.0	8.9
					1.6	8.8	22	2.0	9.0

EV = Enterprise Value = Market Cap and Debt; Ebitda = Earnings before interest, tax, depreciation and amortization; NTM = Next Twelve Months Ended December 31, 2003; P/E = Stock Price to Earnings; PV = Present Value of oil and gas and other businesses

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## Meter Reader

### A Weekly Analysis of Energy Stocks Using the McDep Ratio

February 13, 2003

**Table S-1**  
**Small Cap Energy Companies**  
**Rank by McDep Ratio: Market Cap and Debt to Present Value**

	Symbol/ Rating		Price (\$/sh) 12-Feb 2003	Shares (mm)	Market Cap (\$mm)	Net Present Value (\$/sh)	Debt/ Present Value	McDep Ratio
<b>Energy Infrastructure</b>								
Enbridge Energy Partners, L.P.	EEP	S	44.95	35.0	1,570	14.90	0.64	1.73
El Paso Energy Partners	EPN	S	29.15	57.0	1,660	10.60	0.60	1.71
Enterprise Products Part (16%)	EPD		18.98	28.5	540	6.70	0.63	1.67
Enbridge Energy Management, L.L.C	EEQ	S	39.23	9.0	350	14.90	0.64	1.59
Plains All Amer. Pipeline	PAA		24.84	50.0	1,240	11.60	0.49	1.58
Northern Border Partners	NBP		37.56	44.0	1,650	20.40	0.62	1.31
TEPPCO Partners, L.P.	TPP		29.73	50.0	1,490	17.70	0.56	1.30
AmeriGas Partners, L.P.	APU		24.15	49.4	1,190	18.30	0.51	1.15
Western Gas Resources	WGR		32.55	33.8	1,100	37.60	0.28	0.90
<i>Total or Median</i>					<i>10,800</i>		<i>0.60</i>	<i>1.58</i>
<b>Natural Gas and Oil</b>								
Provident Energy Trust	PVX		7.40	63.5	470	5.00	0.24	1.37
Dorchester Minerals, L.P.	DMLP		13.75	27.0	371	11.60	-	1.18
Pengrowth Energy Trust	PGH		9.78	110.0	1,080	9.50	0.19	1.02
Pogo Producing Company	PPP		35.75	64.5	2,310	35.00	0.23	1.02
Unit Corporation	UNT		18.29	40.0	730	18.00	0.03	1.02
Enerplus Resources Fund	ERF		18.32	75.0	1,370	18.00	0.16	1.01
Quicksilver Resources Inc.	KWK		21.86	20.4	450	22.00	0.38	1.00
Newfield Exploration Company	NFX		32.68	48.9	1,600	35.00	0.24	0.95
Swift Energy Company	SFY		9.35	27.1	250	13.00	0.48	0.85
Stone Energy Company	SGY		32.80	26.5	870	42.00	0.28	0.84
Encore Acquisition Corp. (25%)	EAC		16.76	7.0	117	21.00	0.20	0.84
Southwestern Energy Company	SWN		11.50	26.1	300	17.00	0.46	0.82
Penn Virginia Corporation	PVA		36.09	9.0	330	45.00	0.06	0.81
Spinnaker Exploration Company	SKE		19.25	34.0	660	25.00	-	0.77
Forest Oil Corporation	FST	N	22.82	48.1	1,100	35.00	0.32	0.76
Magnum Hunter Resources, Inc.	MHR		5.65	69.0	390	11.00	0.45	0.73
Canadian Oil Sands Trust (US\$)	COS_u.TO	B	22.43	76.8	1,720	40.00	0.16	0.63
<i>Total or Median</i>					<i>14,100</i>		<i>0.23</i>	<i>0.85</i>
<b>Natural Gas Royalty Trusts</b>								
Cross Timbers Royalty Trust	CRT		19.72	6.0	118	22.00	-	0.89
Hugoton Royalty Trust (46%)	HGT		13.86	18.4	260	17.50	-	0.79
San Juan Basin Royalty Trust	SJT	B	14.12	46.6	660	18.00	-	0.78
<b>Micro Cap</b>								
Abraxas Petroleum Corporation	ABP		0.79	30.0	24	1.00	0.91	0.98
Energy Partners Ltd.(30%)	EPL	B	10.31	8.3	85	11.00	0.36	0.96
Purcell Energy, Ltd. (US\$)	PEL.TO	N	1.86	26.6	49	2.50	0.29	0.81

Buy/Sell rating after symbol: B - Buy, N - Neutral, S - Sell

McDep Ratio = Market cap and Debt to present value of oil and gas and other businesses

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## Meter Reader

### A Weekly Analysis of Energy Stocks Using the McDep Ratio

February 13, 2003

**Table S-2**  
**Small Cap Energy Companies**  
**Rank by EV/Ebitda: Enterprise Value to Earnings Before Interest, Tax, Deprec.**

	Symbol/ Rating	Price (\$/sh) 12-Feb 2003	EV/ Sales NTM	EV/ Ebitda NTM	P/E NTM	Dividend or Distribution NTM (%)	PV/ Ebitda NTM	
<b>Energy Infrastructure</b>								
Enbridge Energy Partners, L.P.	EEP	S	44.95	2.0	15.6	34	8.0	9.0
El Paso Energy Partners	EPN	S	29.15	8.4	15.4	36	9.3	9.0
Enterprise Products Part (16%)	EPD		18.98	1.7	15.0	26	7.3	9.0
Enbridge Energy Management, L.L.C	EEQ	S	39.23	1.9	14.3	29	9.2	9.0
Plains All Amer. Pipeline	PAA		24.84	0.2	14.2	20	8.7	9.0
Northern Border Partners	NBP		37.56	6.8	11.8	14	8.5	9.0
TEPPCO Partners, L.P.	TPP		29.73	1.0	11.7	15	8.1	9.0
AmeriGas Partners, L.P.	APU		24.15	1.6	10.4	23	9.1	9.0
Western Gas Resources	WGR		32.55	0.6	8.1	18	0.6	9.0
	<i>Median</i>			<i>1.7</i>	<i>14.2</i>	<i>23</i>	<i>8.5</i>	<i>9.0</i>
<b>Natural Gas and Oil</b>								
Unit Corporation	UNT		18.29	3.6	9.9	31	-	9.8
Quicksilver Resources Inc.	KWK		21.86	5.1	8.5	21	-	8.6
Dorchester Minerals, L.P.	DMLP		13.75	6.3	7.9	10	11.4	6.6
Enerplus Resources Fund	ERF		18.32	4.9	6.6	12	12.8	6.5
Swift Energy Company	SFY		9.35	3.9	6.3	35	-	7.4
Provident Energy Trust	PVX		7.40	4.1	6.1	15	19.4	4.5
Pengrowth Energy Trust	PGH		9.78	3.9	6.0	15	15.5	5.9
Magnum Hunter Resources, Inc.	MHR		5.65	3.2	5.8	23	-	7.9
Forest Oil Corporation	FST	N	22.82	3.4	5.7	17	-	7.5
Pogo Producing Company	PPP		35.75	3.5	5.6	18	0.3	5.5
Canadian Oil Sands Trust (US\$)	COS_u.TO	B	22.43	3.2	5.5	5	5.9	8.7
Encore Acquisition Corp. (25%)	EAC		16.76	3.7	5.4	11	-	6.5
Southwestern Energy Company	SWN		11.50	2.6	5.2	8	-	6.3
Penn Virginia Corporation	PVA		36.09	2.5	4.9	14	2.5	6.0
Stone Energy Company	SGY		32.80	3.2	4.5	12	-	5.3
Newfield Exploration Company	NFX		32.68	2.9	4.2	13	-	4.4
Spinnaker Exploration Company	SKE		19.25	2.8	3.3	12	-	4.3
	<i>Median</i>			<i>3.5</i>	<i>5.7</i>	<i>14</i>	<i>-</i>	<i>6.5</i>
<b>Natural Gas Royalty Trusts</b>								
Cross Timbers Royalty Trust	CRT		19.72	5.5	7.5	8	12.5	8.4
Hugoton RoyaltyTrust (46%)	HGT		13.86	4.4	5.9	8	13.0	7.5
San Juan Basin Royalty Trust	SJT	B	14.12	4.6	5.6	7	14.0	7.2
<b>Micro Cap</b>								
Abraxas Petroleum Corporation	ABP		0.79	5.6	9.3	-	-	9.5
Purcell Energy, Ltd. (US\$)	PEL.TO	N	1.86	4.2	6.4	22	-	7.8
Energy Partners Ltd.(30%)	EPL	B	10.31	2.6	4.3	-	-	4.5

EV = Enterprise Value = Market Cap and Debt; Ebitda = Earnings before interest, tax, depreciation and amortization; NTM = Next Twelve Months Ended December 31, 2003; P/E = Stock Price to Earnings; PV = Present Value of oil and gas and other businesses

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