PRIVATE ENERGY RISK & RETURN

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Introduction

Private energy funds offer the discerning investor a rich source of returns at an acceptable level of risk. Although public information and rigorous statistical data on the asset class is difficult to find, there have been sufficient studies done for most interested investors to get comfortable with the asset class.

As shown below, historical returns generated by private energy investments range from 10-20% annualized, depending on data source and time periods analyzed. Standard deviations range from 10-25%, again depending on source and time period. Sharpe ratios and other return/risk measures compare quite favorably to other asset classes.

Altius professionals have been investing in this area for over a decade, and believe that a portfolio of private energy funds can reasonably be projected to earn a net return of 16-20% with less volatility than that of publicly-traded stocks.

Return and Risk Data

To support its projections, Altius gathered and analyzed data from several well-regarded sources. Some of this detail is presented below:

Table 1: Historical Private Energy Returns

Period	Net Returns
One Year	9.8%
Five Year	19.3%
Ten Year	20.0%
Twenty Year	16.8%

Source: Cambridge Associates (Periods ending December 31, 2009). Based on data compiled from 185 energy partnerships formed between 1986 and 2009.

As can be seen in Table 1 above, historical returns from private energy funds have been attractive relative to other investments. Further, Table 2 on the next page shows that the standard deviation of returns for private energy funds ranges from 10.6% to 25.0%.

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Table 2: Historical Private Energy Volatility

Vintage Year	Standard Deviation of Net Returns
2000	18.9
2001	21.7
2002	19.4
2003	10.7
2004	14.3
2005	10.6
2006	25.0
2007	15.8

Source: Cambridge Associates (Periods ending December 31, 2009). Based on data compiled from 185 energy partnerships formed between 1986 and 2009.

A simple average of these eight vintage years provides a standard deviation of 17.1. Altius projects that the volatility of a diversified private energy portfolio would fall somewhere between the volatility of stocks and bonds, but closer to that of stocks.

An excellent private energy analysis by Ibbotson Associates entitled "Investing in Direct Energy" was published in March 2005. Unfortunately, the report has not been updated since. Still, Altius believes that the data produced—with the exception of long-term bond data (which was generated in an entirely different interest rate environment)—remains relevant and provides a good comparison between direct or private energy and traditional asset classes. Table 3 below illustrates that direct energy provides a Sharpe Ratio nearly as high as that of large cap US stocks.

Table 3: Return, Standard Deviation, and Sharpe Ratios

Asset Class	Geometric Mean Return	Standard Deviation	Sharpe Ratio
Long Term Bonds	9.1%	11.6	0.84
Large Cap US Stocks	11.3%	17.2	0.73
Direct Energy	12.3%	22.1	0.65
Non-US Stocks	11.1%	23.1	0.59
Public Energy Stocks	10.9%	34.0	0.45

Source: Ibbotson Associates (Periods ending December 31, 2004)

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Chart 4 tracks the performance of private energy funds and shows that they compare favorably to that of buyouts, energy futures, and listed energy stocks over the past 20 years. Table 5 provides solid evidence that risk-adjusted returns are also attractive.

Chart 4: Performance Comparison

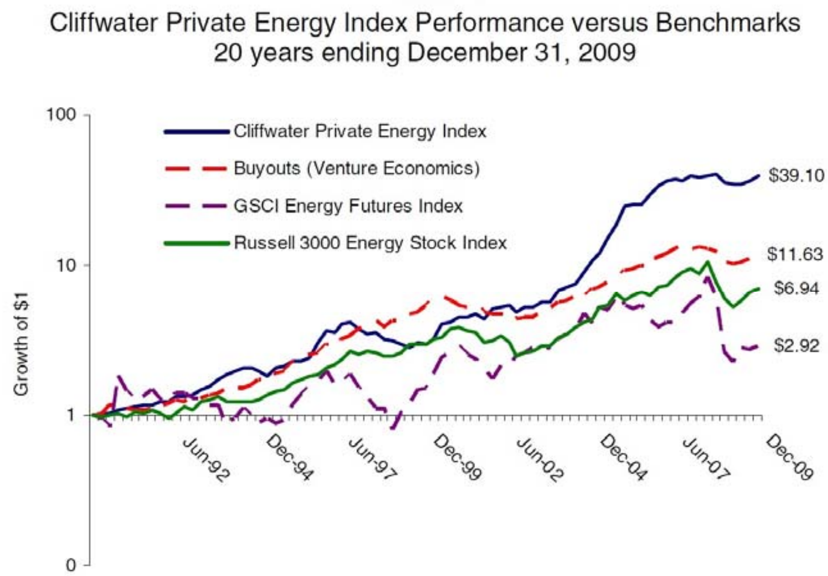

Table 5: Private Energy Risk and Return

	Cliffwater Private Energy Index	Buyout Funds	GSCI Energy Futures Index	Russell 3000 Energy Stock Index
Annual Return	20.1%	13.1%	5.5%	10.2%
Risk	17.7%	11.5%	43.0%	18.0%
Return/Risk	1.14	1.14	0.13	0.57

Source: Cliffwater (20-year period ending December 31, 2009)

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Summary

While information on private energy returns and related statistical data is difficult to find, there are a few examples of quantitative analysis which have been generated from several sources covering multiple time periods. These show a consistent picture of significantly positive returns with less statistical risk than common stocks. This data, Altius believes, shows that investing in private energy provides investors with attractive returns—on both an absolute and risk-adjusted basis.

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