

ClearBridge Energy MLP Fund Inc.
Form N-CSRS
July 27, 2011

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM N-CSR

**CERTIFIED SHAREHOLDER REPORT OF REGISTERED
MANAGEMENT INVESTMENT COMPANIES**

Investment Company Act file number 811-22405

ClearBridge Energy MLP Fund Inc.
(Exact name of registrant as specified in charter)

620 Eighth Ave New York, New York
(Address of principal executive offices)

10018
(Zip code)

Robert I. Frenkel, Esq.
Legg Mason & Co., LLC
100 First Stamford Place,
Stamford, CT 06902
(Name and address of agent for service)

Registrant's telephone number, including area code: (888) 777-0102

Date of fiscal year end: November 30

Date of reporting period: May 31, 2011

ITEM 1. REPORT TO STOCKHOLDERS.

The Semi-Annual Report to Stockholders is filed herewith.

May 31, 2011

Semi-Annual Report

**ClearBridge Energy MLP Fund Inc.
(CEM)**

| |
|--|
| INVESTMENT PRODUCTS: NOT FDIC INSURED • NO BANK GUARANTEE • MAY LOSE VALUE |
|--|

II ClearBridge Energy MLP Fund Inc.

Fund objective

The Fund seeks to provide a high level of total return with an emphasis on cash distributions.

What's inside

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Letter from the chairman

Dear Shareholder,

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We are pleased to provide the semi-annual report of ClearBridge Energy MLP Fund Inc. for the six-month reporting period ended May 31, 2011. Please read on for Fund performance information and a detailed look at prevailing economic and market conditions during the Fund's reporting period.

As always, we remain committed to providing you with excellent service and a full spectrum of investment choices. We also remain committed to supplementing the support you receive from your financial advisor. One way we accomplish this is through our website, www.leggmason.com/cef. Here you can gain immediate access to market and investment information, including:

- Fund prices and performance,
- Market insights and commentaries from our portfolio managers, and
- A host of educational resources.

We look forward to helping you meet your financial goals.

Sincerely,

R. Jay Gerken, CFA

Chairman, President and Chief Executive Officer

June 24, 2011

Investment commentary**Economic review**

While economic indicators were somewhat mixed, the U.S. economy continued to expand over the six months ended May 31, 2011. Looking back, beginning with the fourth quarter of 2010, fears regarding moderating economic growth were replaced with optimism for a strengthening economy in 2011. However, toward the end of the reporting period, concerns regarding the sustainability of the economic recovery returned, negatively impacting some sectors of the equity and fixed-income markets. All told, investors who took on additional risk in their portfolios during the reporting period were generally rewarded.

Although the U.S. Department of Commerce continued to report positive U.S. gross domestic product (GDP)i growth, the expansion has been less robust than has been realized during most other periods exiting a severe recession. According to the Commerce Department, GDP growth was 3.7%, 1.7%, 2.6% and 3.1% during the first, second, third and fourth quarters of 2010, respectively. For calendar 2010 as a whole, the economy expanded 2.9%. The Commerce Department then reported that first quarter 2011 GDP growth was 1.9%. This moderation in growth during the first quarter was due to a variety of factors, including less robust export activity, a decline in government spending and a deceleration in consumer spending given rising oil and food prices.

Turning to the job market, while there were some periods of improvement during the reporting period, unemployment remained stubbornly high. After being 9.0% or higher since April 2009, the unemployment rate fell to 8.9% in February and 8.8% in March 2011. The job market then took two steps backward, as unemployment rose to 9.0% in April and 9.1% in May. Based on U.S. Department of Labor figures, the private sector which represents roughly 70% of the total U.S. workforce added only 83,000 jobs in May, the smallest amount since June 2010. As of the end of the reporting period, approximately 13.9 million Americans looking for work had yet to find a job, and roughly 45% of these individuals have been out of work for more than six months. In addition, while the Federal Reserve Board (Fed)ii believes that unemployment will decline, it projects that it will remain relatively high, between 7.5% and 8.0% at the end of 2012.

The long-ailing housing market continued to show signs of strain during the reporting period. Looking back, sales increased in the spring of 2010 largely due to the government's \$8,000 tax credit for first-time home buyers. This proved to be only a temporary boost, as sales subsequently weakened after the tax credit expired at the end of April. Existing-home sales did rebound somewhat toward the end of 2010 and in January 2011, as mortgage rates remained relatively low. However, according to the National Association of Realtors (NAR), existing-home sales then declined a sharp 8.9% in February. After a 3.5% increase in March, existing-home sales fell 1.8% and 3.8% in April and May, respectively. At the end of May, the inventory of unsold homes was a 9.3 month supply at the current sales level, versus a 9.0 month supply in April. Existing-home prices remained disappointingly low, with the NAR reporting that the median existing-home price for all housing types was \$166,500 in May 2011, down 4.6% from May 2010.

Even the manufacturing sector, one of the stalwarts of the economy in recent years, softened at the end of the

IV ClearBridge Energy MLP Fund Inc.

Investment commentary (continued)

reporting period. Based on the Institute for Supply Management's PMIⁱⁱⁱ, the manufacturing sector grew twenty-two consecutive months since it began expanding (a reading below 50 indicates a contraction, whereas a reading above 50 indicates an expansion) in August 2009. In January 2011, the manufacturing sector expanded at its fastest pace since May 2004, with a reading of 60.8 versus 58.5 for the previous month. Manufacturing activity remained strong during the next three months and was 60.4 in April. However, it then declined to 53.5 in May, the lowest reading in the past twelve months. This was attributed, in part, to supply disruptions triggered by the March earthquake and tsunami in Japan.

Financial market overview

To a large extent, the financial markets were characterized by healthy investor risk appetite and solid results by stocks and lower-quality bonds. However, the financial markets experienced several periods of heightened volatility during the reporting period. The markets experienced sell-offs in mid-February, mid-March and May 2011. During those periods, investors tended to favor the relative safety of U.S. Treasury securities. These setbacks proved to be only temporary and risk aversion was generally replaced with solid demand for riskier assets.

Due to signs that certain areas of the economy were moderating in the middle of 2010 (prior to the beginning of the reporting period), the Fed took further actions to spur the economy. At its August 2010 meeting, the Fed announced an ongoing program that calls for using the proceeds from maturing agency debt and agency mortgage-backed securities to purchase longer-dated Treasury securities.

In addition, the Fed remained cautious given pockets of weakness in the economy. At its meeting in September 2010, the Fed said, "The Committee will continue to monitor the economic outlook and financial developments and is prepared to provide additional accommodation if needed to support the economic recovery. . . . This led to speculation that the Fed may again move to purchase large amounts of agency and Treasury securities in an attempt to avoid a double-dip recession and ward off deflation.

The Fed then took additional action in early November 2010. Citing that "the pace of recovery in output and employment continues to be slow, the Fed announced another round of quantitative easing to help stimulate the economy, entailing the purchase of \$600 billion of long-term U.S. Treasury securities by the end of the second quarter of 2011. This, coupled with its previously announced program to use the proceeds of maturing securities to purchase Treasuries, means the Fed could buy a total of \$850 billion to \$900 billion of Treasury securities by the end of June 2011.

At its meeting in June 2011, the Fed said, "Information received since the Federal Open Market Committee met in April indicates that the economic recovery is continuing at a moderate pace, though somewhat more slowly than the Committee had expected. . . . To promote the ongoing economic recovery and to help ensure that inflation, over time, is at levels consistent with its mandate, the Committee decided today to keep the target range for the federal funds rate at 0 to 1/4 percent. The Committee continues to anticipate that economic conditions—including low rates of resource utilization and a subdued outlook for inflation over the

medium run are likely to warrant exceptionally low levels for the federal funds rate for an extended period. The Fed also announced that it will complete its \$600 billion Treasury securities purchase program at the end of June.

Equity market review

U.S. stock prices, as measured by the S&P 500 Index^v (the Index), moved sharply higher during the reporting period. The market got off to a strong start in December as investor sentiment was buoyed by a two-year extension of the Bush-era tax cuts, and the Index gained 6.68% during the month. This momentum continued in January and February 2011, as the Index returned 2.37% and 3.43%, respectively. Despite geopolitical unrest in the Middle East and the devastating earthquake and tsunami in Japan, the market demonstrated resiliency in March and April, as the Index gained 0.04% and 2.96%, respectively. However, the market took a step backward in May given concerns for the economy and future corporate profits. All told, the Index returned 15.03% over the reporting period.

Looking at the energy master limited partnership (MLP) market, the last six months have been good for MLP companies but muted for MLP securities. The Alerian MLP Index^{vi} has risen by 5.88% over the reporting period. Company earnings for MLPs have generally been robust, as increasing production volumes of crude oil, natural gas liquids, and natural gas from newer shale plays have resulted in a continued build-out of infrastructure. On the securities side, MLP performance for the period has been mixed. MLPs moved higher following the start of the period and in the first few months of 2011, but have sold off since the end of April. The sell-off has coincided with a decline in the broader markets as well as the price of crude oil. While many MLPs' earnings are not actually closely tied to the price of commodities, in the short term, MLPs frequently trade in sympathy with the commodities. MLP prices have also been negatively impacted by concerns over evolving tax legislation in Washington.

Performance review

For the six months ended May 31, 2011, ClearBridge Energy MLP Fund Inc. returned 5.00% based on its net asset value (NAV)^{vii} and 6.78% based on its New York Stock Exchange (NYSE) market price per share. The Lipper Sector Equity Closed-End Funds Category Average^{viii} returned 11.56% over the same time frame. Please note that Lipper performance returns are based on each fund's NAV.

During this six-month period, the Fund made distributions to shareholders totaling \$0.71 per share, which may have included a return of capital. The performance table shows the Fund's six-month total return based on its NAV and market price as of May 31, 2011. **Past performance is no guarantee of future results.**

Performance Snapshot as of May 31, 2011 (unaudited)

Price Per Share

| | 6-Month Total Return* |
|------------------------|----------------------------------|
| \$21.37 (NAV) | 5.00% |
| \$21.97 (Market Price) | 6.78% |

All figures represent past performance and are not a guarantee of future results.

*** Total returns are based on changes in NAV or market price, respectively. Total returns assume the reinvestment of all distributions, including returns of capital, if any, in additional shares in accordance with the Fund's Dividend Reinvestment Plan. Performance figures for periods shorter than one year represent cumulative figures and are not annualized.**

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Investment commentary (continued)

Looking for additional information?

The Fund is traded under the symbol CEM and its closing market price is available in most newspapers under the NYSE listings. The daily NAV is available on-line under the symbol XCEMX on most financial websites. *Barron's* and the *Wall Street Journal's* Monday edition both carry closed-end fund tables that provide additional information. In addition, the Fund issues a quarterly press release that can be found on most major financial websites as well as www.leggmason.com/cef.

In a continuing effort to provide information concerning the Fund, shareholders may call 1-888-777-0102 (toll free), Monday through Friday from 8:00 a.m. to 5:30 p.m. Eastern Time, for the Fund's current NAV, market price and other information.

As always, thank you for your confidence in our stewardship of your assets.

RISKS: *The Fund's concentration of investments in energy-related MLPs subjects it to the risks of investing in MLPs and the energy sector, including the risks of declines in energy and commodity prices, decreases in energy demand, adverse weather conditions, natural or other disasters, changes in government regulation, and changes in tax laws. Leverage may result in greater volatility of NAV and the market price of common shares and increases a shareholder's risk of loss. The Fund may make significant investments in derivative instruments. Derivative instruments can be illiquid, may disproportionately increase losses and have a potentially large impact on Fund performance.*

All investments are subject to risk including the possible loss of principal. Past performance is no guarantee of future results. All index performance reflects no deduction for fees, expenses or taxes. Please note that an investor cannot invest directly in an index.

The information provided is not intended to be a forecast of future events, a guarantee of future results or investment advice. Views expressed may differ from those of the firm as a whole.

Sincerely,

R. Jay Gerken, CFA

Chairman, President and Chief
Executive Officer

June 24, 2011

- i Gross domestic product (GDP) is the market value of all final goods and services produced within a country in a given period of time.
- ii The Federal Reserve Board (Fed) is responsible for the formulation of policies designed to promote economic growth, full employment, stable prices and a sustainable pattern of international trade and payments.
- iii The Institute for Supply Management 's PMI is based on a survey of purchasing executives who buy the raw materials for manufacturing at more than 350 companies. It offers an early reading on the health of the manufacturing sector.
- iv The federal funds rate is the rate charged by one depository institution on an overnight sale of immediately available funds (balances at the Federal Reserve) to another depository institution; the rate may vary from depository institution to depository institution and from day to day.
- v The S&P 500 Index is an unmanaged index of 500 stocks and is generally representative of the performance of larger companies in the U.S.
- vi The Alerian MLP Index is a composite of the fifty most prominent energy MLPs and is calculated using a float-adjusted, capitalization-weighted methodology.
- vii Net asset value (NAV) is calculated by subtracting total liabilities and outstanding preferred stock (if any) from the closing value of all securities held by the Fund (plus all other assets) and dividing the result (total net assets) by the total number of the common shares outstanding. The NAV fluctuates with changes in the market prices of securities in which the Fund has invested. However, the price at which an investor may buy or sell shares of the Fund is the Fund 's market price as determined by supply of and demand for the Fund 's shares.
- viii Lipper, Inc., a wholly-owned subsidiary of Reuters, provides independent insight on global collective investments. Returns are based on the six-month period ended May 31, 2011, including the reinvestment of all distributions, including returns of capital, if any, calculated among the 32 funds in the Fund 's Lipper category.

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Fund at a glance (unaudited)

Investment breakdown (%) as a percent of total investments

The bar graph above represents the composition of the Fund's investments as of May 31, 2011 and November 30, 2010. The Fund is actively managed. As a result, the composition of the Fund's investments is subject to change at any time.

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Schedule of investments (unaudited)

May 31, 2011

ClearBridge Energy MLP Fund Inc.

| | Shares/ Units | Value |
|--|--------------------------|-----------------------|
| Security | | |
| Master Limited Partnerships 99.9% | | |
| Crude/Refined Products Pipelines 26.6% | | |
| Buckeye Partners LP | 700,000 | \$ 44,415,000(a) |
| Enbridge Energy Partners LP | 1,000,000 | 30,710,000(a) |
| Genesis Energy LP | 219,000 | 6,007,170 |
| Holly Energy Partners LP | 445,000 | 24,488,350(a) |
| Magellan Midstream Partners LP | 1,800,004 | 106,308,236(a) |
| NuStar Energy LP | 1,325,000 | 84,071,250(a) |
| NuStar GP Holdings LLC | 1,138,500 | 41,282,010(a) |
| Plains All American Pipeline LP | 1,594,240 | 99,225,498(a) |
| Sunoco Logistics Partners LP | 669,794 | 56,664,572(a) |
| Tesoro Logistics LP | 500,000 | 12,420,000* |
| Total Crude/Refined Products Pipelines | | 505,592,086 |
| Exploration & Production 8.8% | | |
| Linn Energy LLC | 4,275,001 | 166,126,539(a) |
| Global Infrastructure 4.0% | | |
| Brookfield Infrastructure Partners LP | 2,613,940 | 64,695,015(a) |
| Golar LNG Partners LP | 375,000 | 10,380,000* |
| Total Global Infrastructure | | 75,075,015 |
| Natural Gas Gathering/Processing 17.5% | | |
| Chesapeake Midstream Partners LP | 3,365,000 | 88,297,600(a) |
| Copano Energy LLC | 950,000 | 31,882,000(a) |
| Crestwood Midstream Partners LP | 414,997 | 11,549,366(a) |
| DCP Midstream Partners LP | 250,003 | 10,132,622(a) |
| Exterran Partners LP | 352,000 | 9,049,920(a) |
| MarkWest Energy Partners LP | 1,175,000 | 55,836,000(a) |
| Regency Energy Partners LP | 1,424,999 | 35,895,725(a) |
| Targa Resources Partners LP | 1,200,000 | 41,472,000(a) |
| Western Gas Partners LP | 1,394,000 | 48,706,360(a) |
| Total Natural Gas Gathering/Processing | | 332,821,593 |
| Natural Gas/Natural Gas Liquids Pipelines 36.1% | | |
| Boardwalk Pipeline Partners LP | 398,632 | 11,600,191(a) |
| El Paso Pipeline Partners LP | 2,500,000 | 85,925,000(a) |
| Energy Transfer Equity LP | 3,150,000 | 132,741,000(a) |
| Energy Transfer Partners LP | 2,100,000 | 99,771,000(a) |
| Enterprise Products Partners LP | 3,950,000 | 164,478,000(a) |
| ONEOK Partners LP | 650,000 | 54,171,000(a) |

See Notes to Financial Statements.

ClearBridge Energy MLP Fund Inc.

| Security | Shares/ Units | Value |
|---|------------------|----------------------|
| <i>Natural Gas/Natural Gas Liquids Pipelines continued</i> | | |
| PAA Natural Gas Storage LP | 1,401,542 | \$ 31,702,880 |
| TC Pipelines LP | 478,000 | 22,064,480(a) |
| Williams Partners LP | 1,575,483 | 83,374,560(a) |
| Total Natural Gas/Natural Gas Liquids Pipelines | | 685,828,111 |
| <i>Propane Distribution 4.3%</i> | | |
| Inergy LP | 2,175,118 | 80,675,127(a) |
| <i>Shipping 2.6%</i> | | |
| Teekay LNG Partners LP | 1,397,685 | 49,841,447(a) |
| Total Investments Before Short-Term Investments (Cost \$1,556,844,711) | | 1,895,959,918 |

| | Rate | Maturity Date | Face Amount | |
|---|--------|------------------|----------------|------------------------|
| Short-Term Investments 0.1% | | | | |
| <i>Repurchase Agreements 0.1%</i> | | | | |
| State Street Bank & Trust Co. repurchase agreement, dated 5/31/11; Proceeds at maturity \$1,917,001; (Fully collateralized by U.S. government obligations, 1.000% due 4/30/12; Market value \$1,955,367) (Cost \$1,917,000) | 0.010% | 6/1/11 | \$1,917,000 | 1,917,000 |
| Total Investments 100.0% (Cost \$1,558,761,711#) | | | | \$1,897,876,918 |

* Non-income producing security.

(a) All or a portion of this security is held as collateral pursuant to the loan agreements (See Note 5).

Aggregate cost for federal income tax purposes is \$1,507,822,109.

See Notes to Financial Statements.

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Statement of assets and liabilities (unaudited)

May 31, 2011

Assets:

| | |
|--|----------------------|
| Investments, at value (Cost \$1,558,761,711) | \$1,897,876,918 |
| Cash | 395 |
| Dividends, distributions and interest receivable | 810,322 |
| Income tax receivable | 3,008,821 |
| Prepaid expenses | 66,345 |
| Total Assets | 1,901,762,801 |

Liabilities:

| | |
|--|------------------------|
| Loan payable (Note 5) | 382,500,000 |
| Net deferred tax liability | 138,011,398 |
| Investment management fee payable | 1,496,020 |
| Interest payable | 78,243 |
| Directors' fees payable | 2,321 |
| Accrued expenses and other liabilities | 195,634 |
| Total Liabilities | 522,283,616 |
| Total Net Assets | \$1,379,479,185 |

Net Assets:

| | |
|--|------------------------|
| Par value (\$0.001 par value, 64,537,252 shares issued and outstanding; 100,000,000 shares authorized) | \$ 64,537 |
| Paid-in capital in excess of par value | 1,150,419,320 |
| Accumulated net investment loss, net of income taxes, less dividends | (19,682,728) |
| Accumulated net realized gain on investments, net of income taxes | 35,035,476 |
| Net unrealized appreciation on investments, net of income taxes | 213,642,580 |
| Total Net Assets | \$1,379,479,185 |

| | |
|---------------------------|------------|
| Shares Outstanding | 64,537,252 |
|---------------------------|------------|

| | |
|------------------------|---------|
| Net Asset Value | \$21.37 |
|------------------------|---------|

See Notes to Financial Statements.

Statement of operations (unaudited)

For the Six Months Ended May 31, 2011

Investment Income:

| | |
|--|--------------------|
| Dividends and distributions | \$ 56,707,925 |
| Return of capital (Note 1(f)) | (64,785,052) |
| Net Dividends and Distributions | (8,077,127) |
| Interest | 643 |
| Total Investment Income | (8,076,484) |

Expenses:

| | |
|---|---------------------|
| Investment management fee (Note 2) | 8,984,961 |
| Interest expense (Note 5) | 1,979,992 |
| Transfer agent fees | 144,440 |
| Audit and tax | 129,922 |
| Directors' fees | 118,503 |
| Legal fees | 55,100 |
| Fund accounting fees | 50,230 |
| Shareholder reports | 32,824 |
| Stock exchange listing fees | 17,442 |
| Insurance | 14,493 |
| Custody fees | 4,717 |
| Commitment fee (Note 5) | 2,917 |
| Miscellaneous expenses | 2,854 |
| Total Expenses | 11,538,395 |
| Net Investment loss, before income taxes | (19,614,879) |
| Current tax benefit | 19,771,166 |
| Deferred tax expense | (12,513,661) |
| Net Investment loss, net of income taxes | (12,357,374) |

Realized and Unrealized Gain (Loss) on Investments (Notes 1, 3 and 6):

| | |
|--|----------------------|
| Net Realized Gain/(Loss) From: | |
| Investment transactions | 40,327,086 |
| Current tax expense | (17,671,353) |
| Deferred tax benefit | 2,750,331 |
| Net Realized Gain, net of income taxes | 25,406,064 |
| Net Change in Unrealized Appreciation/(Depreciation) From: | |
| Investments | 86,553,523 |
| Deferred tax expense | (32,024,804) |
| Change in Net Unrealized Appreciation/(Depreciation), net of income taxes | 54,528,719 |
| Net Gain on Investments, net of income taxes | 79,934,783 |
| Increase in Net Assets From Operations | \$ 67,577,409 |

See Notes to Financial Statements.

6 ClearBridge Energy MLP Fund Inc. 2011 Semi-Annual Report

Statements of changes in net assets**For the Six Months Ended May 31, 2011 (unaudited)
and the Period Ended November 30, 2010**

| | 2011 | 2010 |
|---|----------------------------|-----------------------------|
| Operations: | | |
| Net investment loss, net of income taxes | \$ (12,357,374) | \$ (145,128) |
| Net realized gain, net of income taxes | 25,406,064 | 9,629,412 |
| Change in net unrealized appreciation/(depreciation), net of income taxes | 54,528,719 | 159,113,861 |
| <i>Increase in Net Assets From Operations</i> | <i>67,577,409</i> | <i>168,598,145</i> |
| Dividends/Distributions to Shareholders (Note 1): | | |
| Dividends | | (7,180,226) |
| Return of capital | (45,223,334) | (37,338,441) |
| <i>Decrease in Net Assets From Dividends/Distributions to Shareholders</i> | <i>(45,223,334)</i> | <i>(44,518,667)</i> |
| Fund Share Transactions: | | |
| Net proceeds from sale of shares (0 and 63,420,524 shares issued, respectively) | | 1,210,056,217 |
| Reinvestment of distributions (518,967 and 597,761 shares reinvested, respectively) | 11,079,745 | 11,909,670 |
| <i>Increase in Net Assets From Fund Share Transactions</i> | <i>11,079,745</i> | <i>1,221,965,887</i> |
| <i>Increase in Net Assets</i> | <i>33,433,820</i> | <i>1,346,045,365</i> |
| Net Assets: | | |
| Beginning of period | 1,346,045,365 | |
| End of period* | \$1,379,479,185 | \$1,346,045,365 |
| * Includes accumulated net investment loss, net of income taxes, less dividends of: | \$(19,682,728) | \$(7,325,354) |

For the period June 25, 2010 (commencement of operations) to November 30, 2010.

See Notes to Financial Statements.

Statement of cash flows (unaudited)

For the Six Months Ended May 31, 2011

Cash Flows Provided (Used) by Operating Activities:

| | |
|--|------------------|
| Dividends, distributions and interest received | \$ 56,383,335 |
| Operating expenses paid | (9,656,943) |
| Interest paid | (1,958,459) |
| Net sales and maturities of short-term investments | 17,882,000 |
| Purchases of long-term investments | (227,797,544) |
| Proceeds from disposition of long-term investments | 170,494,648 |
| Taxes paid | (3,703,702) |
| Net Cash Provided By Operating Activities | 1,643,335 |

Cash Flows Provided (Used) by Financing Activities:

| | |
|--|--------------------|
| Cash distributions paid on Common Stock | (34,143,589) |
| Proceeds from loan | 32,500,000 |
| Net Cash Used By Financing Activities | (1,643,589) |
| Net Decrease in Cash | (254) |
| Cash, Beginning of year | 649 |
| Cash, End of year | \$ 395 |

Reconciliation of Increase in Net Assets from Operations to Net Cash Flows Provided (Used) by Operating Activities:

| | |
|--|----------------------|
| Increase in Net Assets From Operations | \$ 67,577,409 |
| Increase in investments, at value | (96,979,289) |
| Decrease in payable for securities purchased | (4,537,164) |
| Increase in dividends, distributions and interest receivable | (325,233) |
| Increase in deferred tax liability | 41,788,134 |
| Increase in income tax receivables | (3,008,821) |
| Decrease in current tax liability | (2,794,694) |
| Increase in prepaid expenses | (48,467) |
| Increase in interest payable | 21,533 |
| Decrease in accrued expenses | (50,073) |
| Total Adjustments | (65,934,074) |
| Net Cash Flows Provided by Operating Activities | \$ 1,643,335 |

Non-Cash Financing Activities:

| | |
|---|---------------|
| Proceeds from reinvestment of dividends | \$ 11,079,745 |
|---|---------------|

See Notes to Financial Statements.

8 ClearBridge Energy MLP Fund Inc. 2011 Semi-Annual Report

Financial highlights

For a share of capital stock outstanding throughout each year ended November 30, unless otherwise noted:

| | 2011,2 | 2010,3 |
|--|---------------|----------------------------|
| Net asset value, beginning of period | \$21.03 | \$19.074 |
| Income (loss) from operations: | | |
| Net investment loss | (0.19) | (0.00)5 |
| Net realized and unrealized gain | 1.24 | 2.66 |
| Total income from operations | 1.05 | 2.66 |
| Less distributions/dividends: | | |
| Dividends | | (0.11) |
| Return of capital | (0.71) | (0.59) |
| Total distributions | (0.71) | (0.70) |
| Net asset value, end of period | \$21.37 | \$21.03 |
| Market price, end of period | \$21.97 | \$21.26 |
| Total return, based on NAV^{6,7} | 5.00% | 14.17% |
| Total return, based on market price⁷ | 6.78% | 10.05% |
| Net assets, end of period (millions) | \$1,379 | \$1,346 |
| Ratios to average net assets: | | |
| Management fees ⁸ | 1.30% | 1.22% |
| Other expenses ^{8,9} | 0.08 | 0.13 |
| Subtotal | 1.38 | 1.35 |
| Interest expense ⁸ | 0.29 | 0.22 |
| Income tax expense ⁸ | 5.74 | 18.50 |
| Total expenses⁸ | 7.41 | 20.07 ¹⁰ |
| Net investment loss, net of income taxes | (1.79) | (0.03) |
| Portfolio turnover rate | 9% | 13% |
| Supplemental data: | | |
| Loans Outstanding, End of Period (000s) | \$382,500 | \$350,000 |
| Asset Coverage for Loan Outstanding | 461% | 485% |
| Weighted Average Loan (000s) | \$415,234 | \$329,470 |
| Weighted Average Interest Rate on Loans | 0.96% | 0.97% |

1 For the six months ended May 31, 2011 (unaudited).

2 Per share amounts have been calculated using the average shares method.

3 For the period June 25, 2010 (commencement of operations) to November 30, 2010.

4 Initial public offering price of \$20.00 per share less offering costs and sales load totaling \$0.93 per share.

5 Amount represents less than \$0.01 per share.

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- 6 Performance figures may reflect compensating balance arrangements, fees forgone and/or expense reimbursements. In the absence of compensating balance arrangements, fees forgone and/or expense reimbursements, the total return would have been lower. Past performance is no guarantee of future results. Total returns for periods of less than one year are not annualized.
- 7 The total return calculation assumes that distributions are reinvested in accordance with the Fund's dividend reinvestment plan. Past performance is no guarantee of future results. Total returns for periods of less than one year are not annualized.
- 8 Annualized.
- 9 Ratio includes commitment fees incurred on the lines of credit.
- 10 Excludes the impact of reimbursement for organization fees in the amount of 0.01%. Inclusive of the reimbursement the ratio is 20.06%.
The investment manager has agreed to reimburse all organization expenses.

See Notes to Financial Statements.

Notes to financial statements (unaudited)**1. Organization and significant accounting policies**

ClearBridge Energy MLP Fund Inc. (the Fund) was incorporated in Maryland on March 31, 2010 and is a non-diversified, closed-end management investment company under the Investment Company Act of 1940, as amended (the 1940 Act). The Board of Directors authorized 100 million shares of \$0.001 par value common stock. The Fund's investment objective is to provide a high level of total return with an emphasis on cash distributions. The Fund seeks to achieve its objective by investing primarily in master limited partnerships (MLPs) in the energy sector. There can be no assurance that the Fund will achieve its investment objective.

Under normal market conditions, the Fund will invest at least 80% of its Managed Assets in MLPs in the energy sector (the 80% policy). For purposes of the 80% policy, the Fund considers investments in MLPs to include investments that offer economic exposure to public and private MLPs in the form of equity securities of MLPs, securities of entities holding primarily general partner or managing member interests in MLPs, securities that are derivatives of interests in MLPs, including I-Shares, and debt securities of MLPs. Entities in the energy sector are engaged in the business of exploring, developing, producing, gathering, transporting, processing, storing, refining, distributing, mining or marketing of natural gas, natural gas liquids (including propane), crude oil, refined petroleum products or coal.

The following are significant accounting policies consistently followed by the Fund and are in conformity with U.S. generally accepted accounting principles (GAAP). Estimates and assumptions are required to be made regarding assets, liabilities and changes in net assets resulting from operations when financial statements are prepared. Changes in the economic environment, financial markets and any other parameters used in determining these estimates could cause actual results to differ. Subsequent events have been evaluated through the date the financial statements were issued.

(a) Investment valuation. Equity securities for which market quotations are available are valued at the last reported sales price or official closing price on the primary market or exchange on which they trade. Debt securities are valued at the mean between the last quoted bid and asked prices provided by an independent pricing service, which are based on transactions in debt obligations, quotations from bond dealers, market transactions in comparable securities and various other relationships between securities. When reliable prices are not readily available, such as when the value of a security has been significantly affected by events after the close of the exchange or market on which the security is principally traded, but before the Fund calculates its net asset value, the Fund values these securities as determined in accordance with procedures approved by the Fund's Board of Directors. Short-term obligations with maturities of 60 days or less are valued at amortized cost, which approximates fair value.

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Notes to financial statements (unaudited) (cont d)

The Fund has adopted Financial Accounting Standards Board Codification Topic 820 (ASC Topic 820). ASC Topic 820 establishes a single definition of fair value, creates a three-tier hierarchy as a framework for measuring fair value based on inputs used to value the Fund's investments, and requires additional disclosure about fair value. The hierarchy of inputs is summarized below.

- Level 1 quoted prices in active markets for identical investments

- Level 2 other significant observable inputs (including quoted prices for similar investments, interest rates, prepayment speeds, credit risk, etc.)

- Level 3 significant unobservable inputs (including the Fund's own assumptions in determining the fair value of investments)

The inputs or methodology used for valuing securities are not necessarily an indication of the risk associated with investing in those securities.

The Fund uses valuation techniques to measure fair value that are consistent with the market approach and/or income approach, depending on the type of security and the particular circumstance. The market approach uses prices and other relevant information generated by market transactions involving identical or comparable securities. The income approach uses valuation techniques to discount estimated future cash flows to present value.

The following is a summary of the inputs used in valuing the Fund's assets carried at fair value:

| Description | Quoted Prices (Level 1) | Other Significant Observable Inputs (Level 2) | Significant Unobservable Inputs (Level 3) | Total |
|-----------------------------|------------------------------------|--|--|------------------------|
| Master limited partnerships | \$1,895,959,918 | | | \$1,895,959,918 |
| Short-term investments | | \$1,917,000 | | 1,917,000 |
| Total investments | \$1,895,959,918 | \$1,917,000 | | \$1,897,876,918 |

See Schedule of Investments for additional detailed categorizations.

(b) Repurchase agreements. The Fund may enter into repurchase agreements with institutions that its investment adviser has determined are creditworthy. Each repurchase agreement is recorded at cost. Under the terms of a typical repurchase agreement, the Fund acquires a debt security subject to an obligation of the seller to repurchase, and of the Fund to resell, the security at an agreed-upon price and time, thereby determining the yield during the Fund's holding period. When entering into repurchase agreements, it is the Fund's policy that its custodian or a third party custodian, acting on the Fund's behalf, take possession of the underlying collateral securities, the market value of which, at all times, at least equals the principal amount of the repurchase transaction, including accrued interest. To the extent that any repurchase transaction maturity exceeds one business day, the value of the collateral is marked-to-market and measured against the value of the agreement in an effort to ensure the adequacy of the collateral. If the counterparty

defaults, the Fund generally has the right to use the collateral to satisfy the terms of the repurchase transaction. However, if the market value of the collateral declines during the period in which the Fund seeks to assert its rights or if bankruptcy proceedings are commenced with respect to the seller of the security, realization of the collateral by the Fund may be delayed or limited.

(c) Net asset value. The Fund determines the net asset value of its Common Stock on each day the NYSE is open for business, as of the close of the customary trading session (normally 4:00 p.m. Eastern Time), or any earlier closing time that day. The Fund determines the net asset value per share of Common Stock by dividing the value of the Fund's securities, cash and other assets (including interest accrued but not collected) less all its liabilities (including accrued expenses, borrowings and interest payables), net of income taxes, by the total number of shares of Common Stock outstanding.

(d) Master limited partnerships. Entities commonly referred to as MLPs are generally organized under state law as limited partnerships or limited liability companies. The Fund intends to primarily invest in MLPs receiving partnership taxation treatment under the Internal Revenue Code of 1986 (the Code), and whose interests or units are traded on securities exchanges like shares of corporate stock. To be treated as a partnership for U.S. federal income tax purposes, an MLP whose units are traded on a securities exchange must receive at least 90% of its income from qualifying sources such as interest, dividends, real estate rents, gain from the sale or disposition of real property, income and gain from mineral or natural resources activities, income and gain from the transportation or storage of certain fuels, and, in certain circumstances, income and gain from commodities or futures, forwards and options with respect to commodities. Mineral or natural resources activities include exploration, development, production, processing, mining, refining, marketing and transportation (including pipelines), of oil and gas, minerals, geothermal energy, fertilizer, timber or industrial source carbon dioxide. An MLP consists of a general partner and limited partners (or in the case of MLPs organized as limited liability companies, a managing member and members). The general partner or managing member typically controls the operations and management of the MLP and has an ownership stake in the partnership. The limited partners or members, through their ownership of limited partner or member interests, provide capital to the entity, are intended to have no role in the operation and management of the entity and receive cash distributions. The MLPs themselves generally do not pay U.S. federal income taxes. Thus, unlike investors in corporate securities, direct MLP investors are generally not subject to double taxation (i.e., corporate level tax and tax on corporate dividends). Currently, most MLPs operate in the energy and/or natural resources sector.

(e) Concentration risk. Concentration in the energy sector may present more risks than if the Fund were broadly diversified over numerous sectors of the economy. A downturn in the energy sector of the economy could have a

Notes to financial statements (unaudited) (cont d)

larger impact on the Fund than on an investment company that does not concentrate in the sector. At times, the performance of securities of companies in the sector may lag the performance of other sectors or the broader market as a whole.

(f) Return of capital estimates. Distributions received from the Fund's investments in MLPs generally are comprised of income and return of capital. The Fund records investment income and return of capital based on estimates made at the time such distributions are received. Such estimates are based on historical information available from each MLP and other industry sources. These estimates may subsequently be revised based on information received from MLPs after their tax reporting periods are concluded.

For the six months ended May 31, 2011, the Fund estimated that approximately 100% of the MLP distributions received would be treated as a return of capital. The Fund recorded as return of capital the amount of \$56,707,925 of dividends and distributions received from its investments. Net Realized Gain and Change in Net Unrealized Appreciation (Depreciation) in the accompanying Statement of Operations were increased by \$7,392,338 and \$49,315,587, respectively, attributable to the recording of such distributions as a reduction in the cost basis of investments.

Additionally, the Fund recorded revisions to the return of capital estimates from the period ended November 30, 2010 in the amount of an \$8,077,127 decrease in dividends and distributions received from investments, a \$575,935 increase in Net Realized Gain and a \$7,501,192 increase in Change in Net Unrealized Appreciation (Depreciation).

(g) Security transactions and investment income. Security transactions are accounted for on a trade date basis. Interest income, adjusted for amortization of premium and accretion of discount, is recorded on the accrual basis. Dividends and distributions are recorded on the ex-dividend date. The cost of investments sold is determined by use of the specific identification method. To the extent any issuer defaults or a credit event occurs that impacts the issuer, the Fund may halt any additional interest income accruals and consider the realizability of interest accrued up to the date of default or credit event.

(h) Distributions to shareholders. Distributions to common stockholders are declared and paid on a quarterly basis and are recorded on the ex-dividend date. The estimated characterization of the distributions paid to common stockholders will be either a dividend (ordinary income) or distribution (return of capital). This estimate is based on the Fund's operating results during the period. The Fund anticipates that a significant portion of its distribution will be comprised of return of capital as a result of the tax character of cash distributions made by the MLPs. The actual tax characterization of the common stock distributions made during the current year will not be determinable until after the end of the fiscal year when the Fund can determine

earnings and profits and, therefore, it may differ from the preliminary estimates.

(i) Compensating balance arrangements. The Fund has an arrangement with its custodian bank whereby a portion of the custodian's fees is paid indirectly by credits earned on the Fund's cash on deposit with the bank.

(j) Partnership accounting policy. The Fund records its pro rata share of the income (loss) and capital gains (losses), to the extent of distributions it has received, allocated from the underlying partnerships and accordingly adjusts the cost basis of the underlying partnerships for return of capital. These amounts are included in the Fund's Statement of Operations.

(k) Federal and other taxes. The Fund, as a corporation, is obligated to pay federal and state income tax on its taxable income. The Fund invests its assets primarily in MLPs, which generally are treated as partnerships for federal income tax purposes. As a limited partner in the MLPs, the Fund includes its allocable share of the MLP's taxable income in computing its own taxable income. Deferred income taxes reflect (i) taxes on unrealized gains (losses), which are attributable to the temporary difference between fair market value and tax basis, (ii) the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes and (iii) the net tax benefit of accumulated net operating and capital losses. To the extent the Fund has a deferred tax asset, consideration is given as to whether or not a valuation allowance is required. The need to establish a valuation allowance for deferred tax assets is assessed periodically by the Fund based on the Income Tax Topic of the Financial Accounting Standards Board (FASB) Accounting Standards Codification that it is more likely than not that some portion or all of the deferred tax asset will not be realized. In the assessment for a valuation allowance, consideration is given to all positive and negative evidence related to the realization of the deferred tax asset. This assessment considers, among other matters, the nature, frequency and severity of current and cumulative losses, forecasts of future profitability (which are highly dependent on future cash distributions from the Fund's MLP holdings), the duration of statutory carryforward periods and the associated risk that operating and capital loss carryforwards may expire unused.

For the current open tax year and for all major jurisdictions, management of the Fund has concluded that there are no significant uncertain tax positions that would require recognition in the financial statements. Furthermore, management of the Fund is also not aware of any tax positions for which it is reasonably possible that the total amounts of unrecognized tax benefits will significantly change in the next twelve months.

The Fund may rely to some extent on information provided by the MLPs, which may not necessarily be timely, to estimate taxable income allocable to the MLP units held in the portfolio and to estimate the associated deferred

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Notes to financial statements (unaudited) (cont d)

tax liability. Such estimates are made in good faith. From time to time, as new information becomes available, the Fund modifies its estimates or assumptions regarding the deferred tax liability.

The Fund's policy is to classify interest and penalties associated with underpayment of federal and state income taxes, if any, as income tax expense on its Statement of Operations. The current tax year remains open and subject to examination by tax jurisdictions.

2. Investment management agreement and other transactions with affiliates

Legg Mason Partners Fund Advisor, LLC (LMPFA) is the Fund's investment manager and ClearBridge Advisors, LLC (ClearBridge) is the Fund's subadviser. LMPFA and ClearBridge are wholly-owned subsidiaries of Legg Mason, Inc. (Legg Mason).

Under the investment management agreement, the Fund pays an annual fee, paid monthly, in an amount equal to 1.00% of the Fund's average daily Managed Assets.

LMPFA provides administrative and certain oversight services to the Fund. LMPFA delegates to the subadviser the day-to-day portfolio management of the Fund, except for the management of cash and short-term instruments. For its services, LMPFA pays ClearBridge 70% of the net management fee it receives from the Fund.

All officers and one Director of the Fund are employees of Legg Mason or its affiliates and do not receive compensation from the Fund.

3. Investments

During the six months ended May 31, 2011, the aggregate cost of purchases and proceeds from sales of investments (excluding short-term investments) were as follows:

| | |
|-----------|-------------------------------------|
| Purchases | Investments \$223,260,380 |
|-----------|-------------------------------------|

Sales

170,494,648

4. Derivative instruments and hedging activities

Financial Accounting Standards Board Codification Topic 815 requires enhanced disclosure about an entity's derivative and hedging activities.

During the six months ended May 31, 2011, the Fund did not invest in any derivative instruments.

5. Loan

The Fund has revolving credit agreements with two financial institutions, which allows the Fund to borrow up to an aggregate amount of

\$775,000,000. Unless renewed, one agreement with a maximum commitment of \$375,000,000 to borrow, will terminate on July 14, 2011. The other agreement, with a maximum commitment of \$400,000,000 to borrow, has a six-month term but will renew everyday for a six-month term unless notice to the contrary is given to the Fund. The Fund pays a commitment fee at an annual rate of 0.50% on the unutilized portion of the loan for one of the agreements. The interest on both loans is calculated at variable rates based on the LIBOR, plus any applicable margin. Interest expense related to the loans for the six months ended May 31, 2011 was \$1,979,992. For the six months ended May 31, 2011, the Fund incurred commitment fees in the amount of \$2,917. At May 31, 2011, the Fund had \$382,500,000 of borrowings outstanding per these credit agreements. Securities held by the Fund are subject to a lien, granted to the lenders, to the extent of the borrowing outstanding and any additional expenses. For the six months ended May 31, 2011, based on the number of days during the reporting period that the Fund had a loan balance outstanding, the average daily loan balance was \$415,233,516 and the weighted average interest rate was 0.96%.

Subsequent to the period of this report, the Fund renewed the credit agreement through July 13, 2012 for the facility that would have terminated on July 14, 2011.

6. Income taxes

The Fund's income tax provision consists of the following:

| | Current | Deferred | Total |
|--------------------------------------|--------------------|-----------------------|-----------------------|
| Federal tax (expense) / benefit | \$1,986,311 | \$(39,529,317) | \$(37,543,006) |
| State tax (expense) / benefit | 113,502 | (2,258,817) | (2,145,315) |
| Total tax (expense) / benefit | \$2,099,813 | \$(41,788,134) | \$(39,688,321) |

Deferred income taxes reflect (i) taxes on unrealized gains/(losses), which are attributable to the difference between fair market value and tax basis and (ii) the net tax effects of temporary differences between the carrying amounts of assets and liability for financial reporting purposes and the amounts used for income tax purposes and (iii) the net tax benefit of net operating losses.

Components of the Fund's net deferred tax liability as of May 31, 2011 are as follows:

| | |
|--|------------------------|
| Deferred Tax Assets: | |
| Net operating loss carryforwards | \$ 6,308,882 |
| Deferred Tax Liabilities: | |
| Unrealized gains on investment securities | \$ (91,042,085) |
| Basis reduction resulting from return of capital distributions received from MLPs | (34,430,542) |
| Basis reduction resulting from differences in the book vs. taxable income received from MLPs | (18,847,653) |
| Total net deferred tax liability | \$(138,011,398) |

Notes to financial statements (unaudited) (cont d)

Total income taxes have been computed by applying the Federal statutory income tax rate plus a blended state income tax rate totaling 37% to net investment income and realized and unrealized gains on investments before taxes.

At May 31, 2011, the Fund had net operating loss carryforward of \$17,051,033 (deferred tax asset of \$6,308,882). Realization of the deferred tax asset related to the net operating loss carryforward is dependent, in part, on generating sufficient taxable income prior to expiration of the loss carryforward. If not utilized, the entire net operating loss carryforward will expire in 2032.

Although the Fund currently has a net deferred tax liability, it periodically reviews the recoverability of its deferred tax assets based on the weight of available evidence. When assessing the recoverability of its deferred tax assets, significant weight is given to the effects of potential future realized and unrealized gains on investments and the period over which these deferred tax assets can be realized, as the expiration date for the federal net operating loss carryforward is 20 years. Based on the Fund's assessment, it has determined that it is more likely than not that its deferred tax asset will be realized through future taxable income of the appropriate character. Accordingly, no valuation allowance has been established for the Fund's deferred tax asset. The Fund will continue to assess the need for a valuation allowance in the future. Significant declines in the fair value of its portfolio of investments may change the Fund's assessment regarding the recoverability of its deferred tax assets and may result in a valuation allowance. If a valuation allowance is required to reduce any deferred tax asset in the future, it could have a material impact on the Fund's net asset value and results of operations in the period it is recorded.

At May 31, 2011, the cost basis of investments for Federal income tax purposes was \$1,507,822,109. At May 31, 2011, gross unrealized appreciation and depreciation of investments for Federal income tax purposes were as follows:

| | |
|---|----------------------|
| Gross unrealized appreciation | \$391,912,829 |
| Gross unrealized depreciation | (1,858,020) |
| Net unrealized appreciation before tax | \$390,054,809 |
| Net unrealized appreciation after tax | \$245,734,529 |

7. Distributions subsequent to May 31, 2011

On July 19, 2011, the Fund's Board of Directors (the Board) declared a distribution in the amount of \$0.355 per share, payable on August 26, 2011 to shareholders of record on August 19, 2011.

Additional shareholder information (unaudited)**Result of annual meeting of shareholders**

The Annual Meeting of Shareholders of ClearBridge Energy MLP Fund Inc. was held on March 31, 2011, for the purpose of considering and voting upon the election of Directors. The following table provides information concerning the matter voted upon at the meeting:

Election of Directors

| Nominees | Common Shares Votes For | Common Shares Votes Withheld |
|------------------|------------------------------------|---|
| Carol L. Colman | 51,786,696 | 8,801,194 |
| Daniel P. Cronin | 51,748,815 | 8,839,075 |
| Paolo M. Cucchi | 51,556,862 | 9,031,028 |

At May 31, 2011, in addition to Carol L. Colman, Daniel P. Cronin and Paolo M. Cucchi, the other Directors of the Fund were as follows:

Leslie H. Gelb

William R. Hutchinson

Riordan Roett

Jeswald W. Salacuse

R. Jay Gerken, CFA

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Dividend reinvestment plan (unaudited)

Unless you elect to receive distributions in cash (i.e., opt-out), all dividends, including any capital gain dividends, on your Common Stock will be automatically reinvested by American Stock Transfer & Trust Company LLC, as agent for the stockholders (the Plan Agent), in additional shares of Common Stock under the Fund's Dividend Reinvestment Plan (the Plan). You may elect not to participate in the Plan by contacting the Plan Agent. If you do not participate, you will receive all cash distributions paid by check mailed directly to you by American Stock Transfer & Trust Company LLC, as dividend paying agent.

If you participate in the Plan, the number of shares of Common Stock you will receive will be determined as follows:

(1) If the market price of the Common Stock on the record date (or, if the record date is not a NYSE trading day, the immediately preceding trading day) for determining stockholders eligible to receive the relevant dividend or distribution (the determination date) is equal to or exceeds 98% of the net asset value per share of the Common Stock, the Fund will issue new Common Stock at a price equal to the greater of (a) 98% of the net asset value per share at the close of trading on the NYSE on the determination date or (b) 95% of the market price per share of the Common Stock on the determination date.

(2) If 98% of the net asset value per share of the Common Stock exceeds the market price of the Common Stock on the determination date, the Plan Agent will receive the dividend or distribution in cash and will buy Common Stock in the open market, on the NYSE or elsewhere, for your account as soon as practicable commencing on the trading day following the determination date and terminating no later than the earlier of (a) 30 days after the dividend or distribution payment date, or (b) the record date for the next succeeding dividend or distribution to be made to the stockholders; except when necessary to comply with applicable provisions of the federal securities laws. If during this period: (i) the market price rises so that it equals or exceeds 98% of the net asset value per share of the Common Stock at the close of trading on the NYSE on the determination date before the Plan Agent has completed the open market purchases or (ii) if the Plan Agent is unable to invest the full amount eligible to be reinvested in open market purchases, the Plan Agent will cease purchasing Common Stock in the open market and the Fund shall issue the remaining Common Stock at a price per share equal to the greater of (a) 98% of the net asset value per share at the close of trading on the NYSE on the determination date or (b) 95% of the then current market price per share.

Common Stock in your account will be held by the Plan Agent in non-certificated form. Any proxy you receive will include all shares of Common Stock you have received under the Plan. You may withdraw from the Plan

(i.e., opt-out) by notifying the Plan Agent in writing at P.O. Box 922, Wall Street Station, New York, NY 10269-0560 or by calling the Plan Agent at 1-888-888-0151. Such withdrawal will be effective immediately if notice is received by the Plan Agent not less than ten business days prior to any dividend or distribution record date; otherwise such withdrawal will be effective as soon as practicable after the Plan Agent's investment of the most recently declared dividend or distribution on the Common Stock. The Plan may be terminated, amended or supplemented by the Fund upon notice in writing mailed to stockholders at least 30 days prior to the record date for the payment of any dividend or distribution by the Fund for which the termination or amendment is to be effective.

Upon any termination, you will be sent cash for any fractional share of Common Stock in your account. You may elect to notify the Plan Agent in advance of such termination to have the Plan Agent sell part or all of your Common Stock on your behalf. You will be charged a service charge and the Plan Agent is authorized to deduct brokerage charges actually incurred for this transaction from the proceeds.

There is no service charge for reinvestment of your dividends or distributions in Common Stock. However, all participants will pay a pro rata share of brokerage commissions incurred by the Plan Agent when it makes open market purchases. Because all dividends and distributions will be automatically reinvested in additional shares of Common Stock, this allows you to add to your investment through dollar cost averaging, which may lower the average cost of your Common Stock over time. Dollar cost averaging is a technique for lowering the average cost per share over time if the Fund's net asset value declines. While dollar cost averaging has definite advantages, it cannot assure profit or protect against loss in declining markets.

Automatically reinvesting dividends and distributions does not mean that you do not have to pay income taxes due upon receiving dividends and distributions. Investors will be subject to income tax on amounts reinvested under the Plan. See "Certain United States Federal Income Tax Considerations" in this Prospectus and the SAI.

The Fund reserves the right to amend or terminate the Plan if, in the judgment of the Board of Directors, the change is warranted. There is no direct service charge to participants in the Plan; however, the Fund reserves the right to amend the Plan to include a service charge payable by the participants. Additional information about the Plan and your account may be obtained from the Plan Agent at 6201 15th Avenue, Brooklyn, New York 11219 or by calling the Plan Agent at 1-888-888-0151.

ClearBridge

Energy MLP Fund Inc.

Directors

Carol L. Colman
Daniel P. Cronin
Paolo M. Cucchi
Leslie H. Gelb
R. Jay Gerken, CFA
Chairman
William R. Hutchinson
Riordan Roett
Jeswald W. Salacuse

Officers

R. Jay Gerken, CFA
President and Chief Executive Officer
Kaprel Ozsolak
Chief Financial Officer
Ted P. Becker
Chief Compliance Officer
Vanessa A. Williams
Identity Theft Prevention Officer
Robert I. Frenkel
Secretary and Chief Legal Officer
Thomas C. Mandia
Assistant Secretary
Steven Frank
Treasurer
Jeanne M. Kelly
Senior Vice President

ClearBridge Energy MLP Fund Inc.

620 Eighth Avenue
49th Floor
New York, NY 10018

Investment manager

Legg Mason Partners Fund Advisor, LLC

Subadviser

ClearBridge Advisors, LLC

Custodian

State Street Bank and Trust Company
1 Lincoln Street
Boston, MA 02111

Transfer agent

American Stock Transfer & Trust Company
59 Maiden Lane
New York, NY 10038

Independent registered public accounting firm

KPMG LLP
345 Park Avenue
New York, NY 10154

Legal counsel

Simpson Thacher & Bartlett LLP
425 Lexington Avenue
New York, NY 10017-3909

New York Stock Exchange Symbol

CEM

Legg Mason Funds Privacy and Security Notice

Your Privacy and the Security of Your Personal Information is Very Important to the Legg Mason Funds

This Privacy and Security Notice (the "Privacy Notice") addresses the Legg Mason Funds' privacy and data protection practices with respect to nonpublic personal information the Funds receive. The Legg Mason Funds include any funds sold by the Funds' distributor, Legg Mason Investor Services, LLC, as well as Legg Mason-sponsored closed-end funds. The provisions of this Privacy Notice apply to your information both while you are a shareholder and after you are no longer invested with the Funds.

The Type of Nonpublic Personal Information the Funds Collect About You

The Funds collect and maintain nonpublic personal information about you in connection with your shareholder account. Such information may include, but is not limited to:

- Personal information included on applications or other forms;
- Account balances, transactions, and mutual fund holdings and positions;
- Online account access user IDs, passwords, security challenge question responses; and
- Information received from consumer reporting agencies regarding credit history and creditworthiness (such as the amount of an individual's total debt, payment history, etc.).

How the Funds Use Nonpublic Personal Information About You

The Funds do not sell or share your nonpublic personal information with third parties or with affiliates for their marketing purposes, or with other financial institutions or affiliates for joint marketing purposes, unless you have authorized the Funds to do so. The Funds do not disclose any nonpublic personal information about you except as may be required to perform transactions or services you have authorized or as permitted or required by law. The Funds may disclose information about you to:

- Employees, agents, and affiliates on a "need to know" basis to enable the Funds to conduct ordinary business or comply with obligations to government regulators;
- Service providers, including the Funds' affiliates, who assist the Funds as part of the ordinary course of business (such as printing, mailing services, or processing or servicing your account with us) or otherwise perform services on the Funds' behalf, including companies that may perform marketing services solely for the Funds;

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- The Funds' representatives such as legal counsel, accountants and auditors; and
- Fiduciaries or representatives acting on your behalf, such as an IRA custodian or trustee of a grantor trust.

NOT PART OF THE SEMI-ANNUAL REPORT

Legg Mason Funds Privacy and Security Notice (cont d)

Except as otherwise permitted by applicable law, companies acting on the Funds' behalf are contractually obligated to keep nonpublic personal information the Funds provide to them confidential and to use the information the Funds share only to provide the services the Funds ask them to perform.

The Funds may disclose nonpublic personal information about you when necessary to enforce their rights or protect against fraud, or as permitted or required by applicable law, such as in connection with a law enforcement or regulatory request, subpoena, or similar legal process. In the event of a corporate action or in the event a Fund service provider changes, the Funds may be required to disclose your nonpublic personal information to third parties. While it is the Funds' practice to obtain protections for disclosed information in these types of transactions, the Funds cannot guarantee their privacy policy will remain unchanged.

Keeping You Informed of the Funds' Privacy and Security Practices

The Funds will notify you annually of their privacy policy as required by federal law. While the Funds reserve the right to modify this policy at any time they will notify you promptly if this privacy policy changes.

The Funds' Security Practices

The Funds maintain appropriate physical, electronic and procedural safeguards designed to guard your nonpublic personal information. The Funds' internal data security policies restrict access to your nonpublic personal information to authorized employees, who may use your nonpublic personal information for Fund business purposes only.

Although the Funds strive to protect your nonpublic personal information, they cannot ensure or warrant the security of any information you provide or transmit to them, and you do so at your own risk. In the event of a breach of the confidentiality or security of your nonpublic personal information, the Funds will attempt to notify you as necessary so you can take appropriate protective steps. If you have consented to the Funds using electronic communications or electronic delivery of statements, they may notify you under such circumstances using the most current email address you have on record with them.

In order for the Funds to provide effective service to you, keeping your account information accurate is very important. If you believe that your account information is incomplete, not accurate or not current, or if you have questions about the Funds' privacy practices, write the Funds using the contact information on your account statements, email the Funds by clicking on the Contact Us section of the Funds' website at www.leggmason.com, or contact the Fund at 1-888-777-0102.

Revised April 2011

NOT PART OF THE SEMI-ANNUAL REPORT

ClearBridge Energy MLP Fund Inc.

ClearBridge Energy MLP Fund Inc.
620 Eighth Avenue
49th Floor
New York, NY 10018

Notice is hereby given in accordance with Section 23(c) of the Investment Company Act of 1940, as amended, that from time to time, the Fund may purchase, at market prices, shares of its common stock in the open market.

The Fund files its complete schedule of portfolio holdings with the Securities and Exchange Commission (SEC) for the first and third quarters of each fiscal year on Form N-Q. The Fund's Forms N-Q are available on the SEC's website at www.sec.gov. The Fund's Forms N-Q may be reviewed and copied at the SEC's Public Reference Room in Washington, D.C., and information on the operation of the Public Reference Room may be obtained by calling 1-800-SEC-0330. To obtain information on Form N-Q from the Fund, shareholders can call 1-888-777-0102.

Information on how the Fund voted proxies relating to portfolio securities during the prior 12-month period ended June 30th of each year and a description of the policies and procedures that the Fund uses to determine how to vote proxies relating to portfolio securities are available (1) without charge, upon request, by calling 1-888-777-0102, (2) on the Fund's website at www.leggmason.com/cef and (3) on the SEC's website at www.sec.gov.

This report is transmitted to the shareholders of the ClearBridge Energy MLP Fund Inc. for their information. This is not a prospectus, circular or representation intended for use in the purchase of shares of the Fund or any securities mentioned in this report.

American Stock
Transfer & Trust Company
59 Maiden Lane
New York, NY 10038

CBAX013771 7/11 SR11-1422

ITEM 2. CODE OF ETHICS.

Not Applicable.

ITEM 3. AUDIT COMMITTEE FINANCIAL EXPERT.

Not Applicable.

ITEM 4. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

Not Applicable.

ITEM 5. AUDIT COMMITTEE OF LISTED REGISTRANTS.

Not Applicable.

ITEM 6. SCHEDULE OF INVESTMENTS.

Included herein under Item 1.

ITEM 7. DISCLOSURE OF PROXY VOTING POLICIES AND PROCEDURES FOR CLOSED-END MANAGEMENT INVESTMENT COMPANIES.

Not Applicable.

ITEM 8. PORTFOLIO MANAGERS OF CLOSED-END MANAGEMENT INVESTMENT COMPANIES.

Not Applicable.

ITEM 9. PURCHASES OF EQUITY SECURITIES BY CLOSED-END MANAGEMENT INVESTMENT COMPANY AND AFFILIATED PURCHASERS.

Not Applicable.

ITEM 10. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS.

Not Applicable.

ITEM 11. CONTROLS AND PROCEDURES.

(a) The registrant's principal executive officer and principal financial officer have concluded that the registrant's disclosure controls and procedures (as defined in Rule 30a-3(c) under the Investment Company Act of 1940, as amended (the "1940 Act")) are effective as of a date within 90 days of the filing date of this report that includes the disclosure required by this paragraph, based on their evaluation of the disclosure controls and procedures required by Rule 30a-3(b) under the 1940 Act and 15d-15(b) under the Securities Exchange Act of 1934.

(b) There were no changes in the registrant's internal control over financial reporting (as defined in Rule 30a-3(d) under the 1940 Act) that occurred during the registrant's last fiscal half-year (the registrant's second fiscal half-year in the case of an annual report) that have materially affected, or are likely to materially affect the registrant's internal control over financial reporting.

ITEM 12. EXHIBITS.

(a) (1) Not Applicable.

Exhibit 99.CODE ETH

(a) (2) Certifications pursuant to section 302 of the Sarbanes-Oxley Act of 2002 attached hereto.

Exhibit 99.CERT

(b) Certifications pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 attached hereto.

Exhibit 99.906CERT

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, the registrant has duly caused this Report to be signed on its behalf by the undersigned, there unto duly authorized.

ClearBridge Energy MLP Fund Inc.

By: /s/ R. Jay Gerken
(R. Jay Gerken)
Chief Executive Officer of
ClearBridge Energy MLP Fund Inc.

Date: July 27, 2011

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

By: /s/ R. Jay Gerken
(R. Jay Gerken)
Chief Executive Officer of
ClearBridge Energy MLP Fund Inc.

Date: July 27, 2011

By: /s/ Kaprel Ozsolak
(Kaprel Ozsolak)
Chief Financial Officer of
ClearBridge Energy MLP Fund Inc.

Date: July 27, 2011
