ClearBridge Energy MLP Opportunity Fund Inc. Form N-CSRS July 25, 2016

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 811-22546

ClearBridge Energy MLP Opportunity Fund Inc.

(Exact name of registrant as specified in charter)

620 Eighth Avenue 49th Floor, New York, NY 10018

(Address of principal executive offices) (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, 2016

ITEM 1. REPORT TO STOCKHOLDERS.

The **Semi-Annual** Report to Stockholders is filed herewith.

Semi-Annual Report

May 31, 2016

CLEARBRIDGE

ENERGY MLP
OPPORTUNITY FUND
INC. (EMO)

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

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Fund objective	

The Fund s investment objective is to provide long-term investors 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.

Letter from the chairman

Dear Shareholder,

We are pleased to provide the semi-annual report of ClearBridge Energy MLP Opportunity Fund Inc. for the six-month reporting period ended May 31, 2016. 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.lmcef.com. 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,

Jane Trust, CFA

Chairman, President and Chief Executive Officer

June 30, 2016

Investment commentary

Economic review

The pace of U.S. economic activity moderated during the six months ended May 31, 2016 (the reporting period). Looking back, the U.S. Department of Commerce reported that third quarter 2015 U.S. gross domestic product (GDP growth was 2.0%. The U.S. Department of Commerce then reported that fourth quarter 2015 GDP growth was 1.4%. Slower growth was attributed to downturns in nonresidential fixed investment and state and local government spending, along with a deceleration in personal consumption expenditures (PCE) and less export activity. The U.S. Department of Commerce's final reading for first quarter 2016 GDP growth released after the reporting period ended was 1.1%. This further slowdown was attributed to a number of factors, including a deceleration in PCE, a larger decrease in nonresidential fixed investment and a downturn in federal government spending.

Job growth in the U.S. was generally solid and was a tailwind for the economy during the reporting period. When the period began, unemployment was 5.0%, as reported by the U.S. Department of Labor. By May 2016, unemployment was 4.7%, its lowest level since December 2007.

Investment commentary (cont d)

Market review

Q. How did the Federal Reserve Board (Fedirespond to the economic environment?

A. After an extended period of maintaining the federal funds rateⁱⁱⁱ at a historically low range between zero and 0.25%, the Fed increased the rate at its meeting on December 16, 2015. This marked the first rate hike since 2006. In particular, the U.S. central bank raised the federal funds rate to a range between 0.25% and 0.50%. In its official statement after the December 2015 meeting, the Fed said, The stance of monetary policy remains accommodative after this increase, thereby supporting further improvement in labor market conditions and a return to 2 percent inflation. The Committee expects that economic conditions will evolve in a manner that will warrant only gradual increases in the federal funds rate; the federal funds rate is likely to remain, for some time, below levels that are expected to prevail in the longer run. At its meetings that concluded on January 27, 2016, March 16, 2016, April 27, 2016, and June 15, 2016 (after the reporting period ended), the Fed kept rates on hold.

Q. What factors impacted the U.S. stock market during the reporting period?

A. The U.S. stock market was volatile over the six months ended May 31, 2016. The market declined during the first three months of the reporting period. This weakness was triggered by a number of factors, including concerns about the fallout from moderating economic growth in China, uncertainties surrounding future Fed actions and several geopolitical issues. However, the market then rallied over the last three months of the reporting period. Investor sentiment improved as U.S. economic data was generally positive, oil prices moved higher and the Fed reduced its expectations for rate hikes in 2016. All told, for the six months ended May 31, 2016, the S&P 500 Index^{iv} gained 1.93%.

Looking at the U.S. stock market more closely, mid-cap stocks, as measured by the Russell Midcap Index^v, generated the strongest returns, as they gained 2.21% over the reporting period. In contrast, small-cap stocks generated the weakest results, with the Russell 2000 Index^{vi}, falling 2.86%, whereas large-cap stocks, as measured by the Russell 1000 Index^{vii}, returned 1.64%. From an investment style perspective, growth and value stocks, as measured by the Russell 3000 Growth^{viii} and Russell 3000 Value^{ix} Indices, returned -0.20% and 2.88%, respectively, during the six months ended May 31, 2016.

Looking at the energy master limited partnership (MLP) market, over the six months ended May 31, 2016, the Alerian MLP Indexincreased 5.22% compared to the 1.93% return of the S&P 500 Index. After underperforming the broader market in the latter half of 2015 and early 2016, the Alerian MLP Index rebounded strongly to close out the period, as oil prices increased after bottoming out in February 2016 at \$26 per barrel. By the end of May 2016 oil reached \$49 per barrel, reflecting an overall market rally, while the Alerian MLP Index itself returned 51.9% from the oil-price trough in February through May 31, 2016. The decline in oil prices over the last two years had caused concern among MLP investors that there would be a reduction in capital expenditures in Exploration and Production companies and that there could be an increase in upstream bankruptcies, putting downward

pressure on midstream MLP revenue projections. Short-term fluctuations in MLP stocks may be expected in this environment; however, we believe over the long-term, MLP share prices will be driven by company fundamentals and their ability to grow distributions to investors.

Performance review

For the six months ended May 31, 2016, ClearBridge Energy MLP Opportunity Fund Inc. returned -5.94% based on its net asset value (NAV^i) and -9.81% based on its New York Stock Exchange (NYSE) market price per share. The Lipper Energy MLP Closed-End Funds Category Average^{xii} returned -2.48% 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 \$0.64 per share. As of May 31, 2016, the Fund estimates that all of the distributions constituted a return of capital.* The performance table shows the Fund six-month total return based on its NAV and market price as of May 31, 2016. Past performance is no guarantee of future results.

Performance Snapshot as of May 31, 2016 (unaudited)

6-Month
Total Return**

Price Per Share \$13.54 (NAV) \$12.50 (Market Price)

-5.94% -9.81%

All figures represent past performance and are not a guarantee of future results. Performance figures for periods shorter than one year represent cumulative figures and are not annualized.

** Total returns are based on changes in NAV or market price, respectively. Returns reflect the deduction of all Fund expenses, including management fees, operating expenses, and other Fund expenses. Returns do not reflect the deduction of brokerage commissions or taxes that investors may pay on distributions or the sale of shares.

Total return assumes the reinvestment of all distributions, including returns of capital, if any, at NAV.

Total return assumes the reinvestment of all distributions, including returns of capital, if any, in additional shares in accordance with the Fund s Dividend Reinvestment Plan.

Looking for additional information?

The Fund is traded under the symbol EMO and its closing market price is available in most newspapers under the NYSE listings. The daily NAV is available on-line under the symbol XEMOX 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.lmcef.com (click on the name of the Fund).

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.

^{*}This estimate is not for tax purposes. The Fund will issue a Form 1099 with final composition of the distributions for tax purposes after year-end. A return of capital is not taxable and results in a reduction in the tax basis of a shareholder s investment. For more information about a distribution s composition, please refer to the Fund s distribution press release or, if applicable, the Section 19 notice located in the press release section of our website, www.lmcef.com (click on the name of the Fund).

Investment commentary (cont d)

Thank you for your investment in ClearBridge Energy MLP Opportunity Fund Inc. As always, we appreciate that you have chosen us to manage your assets and we remain focused on achieving the Fund s investment goals.

Sincerely,

Jane Trust, CFA

Chairman, President and Chief Executive Officer

June 30, 2016

RISKS: All investments are subject to risk, including the risk of loss. MLP distributions are not guaranteed and there is no assurance that all distributions will be tax deferred. Investments in MLP securities are subject to unique risks. The Fund s concentration of investments in energy-related MLPs subjects it to the risks of MLPs and the energy sector, including the risks of declines in energy or 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. The Fund may invest in small-capitalization or illiquid securities, which can increase the risk and volatility of the Fund.

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.

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 U.S. policies designed to promote economic growth, full employment, stable prices and a sustainable pattern of international trade and payments. iii The federal funds rate is the rate charged by one depository institution on an overnight sale of immediately available funds (balances at the Fed) to another depository institution; the rate may vary from depository institution to depository institution and from day to day. iv 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. Y The Russell Midcap Index measures the performance of the mid-cap segment of the U.S. equity universe. The Russell Midcap is a subset of the Russell 1000 Index. It includes approximately 800 of the smallest securities based on a combination of their market cap and current index membership. The Russell Midcap represents approximately 31% of the total market capitalization of the Russell 1000 companies. vi The Russell 2000 Index measures the performance of the small-cap segment of the U.S. equity universe. The Russell 2000 is a subset of the Russell 3000 Index representing approximately 10% of the total market capitalization of that index. It includes approximately 2,000 of the smallest securities based on a combination of their market cap and current index membership. The Russell 3000 Index measures the performance of the 3,000 largest U.S. companies based on total market capitalization, which represents approximately 98% of the U.S. equity market. vii The Russell 1000 Index measures the performance of the large-cap segment of the U.S. equity universe. It is a subset of the Russell 3000 Index and includes approximately 1,000 of the largest securities based on a combination of their market cap and current index membership. The Russell 1000 represents approximately 92% of the U.S. market. viii The Russell 3000 Growth Index measures the performance of the broad growth segment of the U.S. equity universe. It includes those Russell 3000 Index companies with higher price-to-book ratios and higher forecasted growth values. (A price-to-book ratio is the price of a stock compared to the difference between a company s assets and liabilities.) ix The Russell 3000 Value Index measures the performance of the broad value segment of the U.S. equity value universe. It includes those Russell 3000 Index companies with lower price-to-book ratios and lower forecasted growth values. x The Alerian MLP Index is a composite of the fifty most prominent energy master limited partnerships (MLPs) and is calculated using a float-adjusted, capitalization-weighted methodology. xi Net asset value (NAV) is calculated by subtracting total liabilities, including liabilities associated with financial leverage (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. xii 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, 2016, including the reinvestment of all distributions, including returns of capital, if any, calculated among the 23 funds in the Fund s Lipper category.

VII

Fund	at	a	g	lance	(unaudited)
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Investment breakdown (%) as a percent of total investments

The bar graph above represents the composition of the Fund s investments as of May 31, 2016 and November 30, 2015. The Fund is actively managed. As a result, the composition of the Fund s investments is subject to change at any time.

ClearBridge Energy MLP Opportunity Fund Inc. 2016 Semi-Annual Report

Schedule of investments (unaudited)

May 31, 2016

ClearBridge Energy MLP Opportunity Fund Inc.

	Shares/	
Security	Units	Value
Master Limited Partnerships 130.4%		
Diversified Energy Infrastructure 37.0%		
Energy Transfer Partners LP	1,112,937	\$ 40,355,096
Enterprise Products Partners LP	1,880,017	52,189,272
Genesis Energy LP	749,110	28,218,974
ONEOK Partners LP	687,270	26,081,896
Plains GP Holdings LP, Class A Shares	997,190	9,363,614
Total Diversified Energy Infrastructure		156,208,852
Gathering/Processing 17.7%		
Antero Midstream Partners LP	248,590	6,115,314
Blueknight Energy Partners LP	705,845	3,536,284
DCP Midstream Partners LP	500,995	16,798,362
Enable Midstream Partners LP	352,480	5,125,059
EnLink Midstream Partners LP	960,658	15,120,757
Midcoast Energy Partners LP	11,984	97,670
Rice Midstream Partners LP	491,467	8,988,931
Western Gas Partners LP	381,730	19,021,606
Total Gathering/Processing		74,803,983
General Partner 2.0%		
Tallgrass Energy GP LP	346,630	8,332,985
Liquids Transportation & Storage 44.7%		
Buckeye Partners LP	524,206	37,700,896
Delek Logistics Partners LP	328,530	8,669,907
Enbridge Energy Partners LP	1,457,134	31,678,093
Global Partners LP	203,670	2,706,774
Holly Energy Partners LP	280,732	9,309,073
Magellan Midstream Partners LP	496,520	34,781,226
NuStar Energy LP	257,870	12,679,468
PBF Logistics LP	575,000	12,529,250
Plains All American Pipeline LP	479,260	11,085,284
Sunoco Logistics Partners LP	472,210	12,962,164
Tesoro Logistics LP	169,600	8,335,840
World Point Terminals LP	417,456	6,378,728
Total Liquids Transportation & Storage		188,816,703
Natural Gas Transportation & Storage 12.6%		
Cheniere Energy Partners LP	176,770	5,110,421
Columbia Pipeline Partners LP	685,670	10,099,919
TC Pipelines LP	230,630	12,737,695

See Notes to Financial Statements.

² ClearBridge Energy MLP Opportunity Fund Inc. 2016 Semi-Annual Report

	Shares/	
Security	Units	Value
Natural Gas Transportation & Storage continued		
Williams Partners LP	791,417	\$ 25,262,030
Total Natural Gas Transportation & Storage		53,210,065
Oil/Refined Products 10.9%		
JP Energy Partners LP	220,440	1,836,265
MPLX LP	785,597	25,060,545
Rose Rock Midstream LP	684,519	17,660,590
VTTI Energy Partners LP	75,300	