ClearBridge Investments

A Legg Mason Company

Annual Report | November 30, 2019

CLEARBRIDGE ENERGY MIDSTREAM OPPORTUNITY FUND INC. (EMO)

Beginning in January 2021, as permitted by regulations adopted by the Securities and Exchange Commission, the Fund intends to no longer mail paper copies of the Fund's shareholder reports like this one, unless you specifically request paper copies of the reports from the Fund or from your financial intermediary (such as a broker-dealer or bank). Instead, the reports will be made available on a website, and you will be notified by mail each time a report is posted and provided with a website link to access the report.

If you invest through a financial intermediary and you already elected to receive shareholder reports electronically ("e-delivery"), you will not be affected by this change and you need not take any action. If you have not already elected e-delivery, you may elect to receive shareholder reports and other communications from the Fund electronically by contacting your financial intermediary.

You may elect to receive all future reports in paper free of charge. If you invest through a financial intermediary, you can contact your financial intermediary to request that you continue to receive paper copies of your shareholder reports. That election will apply to all Legg Mason Funds held in your account at that financial intermediary. If you are a direct shareholder with the Fund, you can call the Fund at 1-888-888-0151, or write to the Fund by regular mail at P.O. Box 505000, Louisville, KY 40233 or by overnight delivery to Computershare, 462 South 4th Street, Suite 1600, Louisville, KY 40202 to let the Fund know you wish to continue receiving paper copies of your shareholder reports. That election will apply to all Legg Mason Funds held in your account held directly with the fund complex.

Legg Mason
Global Asset Management

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 energy midstream entities.

What's inside

Letter from the chairman

Dear Shareholder,

We are pleased to provide the annual report of ClearBridge Energy Midstream Opportunity Fund Inc. for the twelve-month reporting period ended November 30, 2019. Please read on for a detailed look at prevailing economic and market conditions during the Fund's reporting period and to learn how those conditions have affected Fund performance.

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

Jane Trust, CFA
Chairman, President and Chief Executive Officer

December 31, 2019

Fund overview

Q. What is the Fund's investment strategy?

A. 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 energy midstream entities. Under normal market conditions, the Fund invests at least 80% of its managed assets in energy midstream entities including entities structured as both partnerships and corporations (the 80% policy).

For purposes of the 80% policy, the Fund considers investments in mid-stream entities as those entities that provide midstream services including the gathering, transporting, processing, fractionation, storing, refining, and distribution of oil, natural gas liquids and natural gas. The Fund considers an entity to be within the Energy sector if it derives at least 50% of its revenues from the business of exploring, developing, producing, gathering, transporting, processing, fractionating, storing, refining, distributing, mining or marketing natural gas, natural gas liquids (including propane), crude oil, refined petroleum products or coal.

We currently focus primarily on investments in midstream entities with operations in crude oil, natural gas liquids and refined products infrastructure. We believe that the increased supply of domestic oil and natural gas liquids — due primarily to recent shale gas discoveries — makes midstream entities focused on these liquid products well positioned for long-term growth.

However, should macroeconomic energy, political, regulatory or tax considerations evolve, and other types of midstream entities become more attractive, we may look to invest in these new opportunities, subject to compliance with the Fund's 80% policy.

ClearBridge Investments, LLC is the Fund's subadviser. The portfolio managers primarily responsible for overseeing the day-to-day management of the Fund are Richard A. Freeman, Michael Clarfeld, CFA, Chris Eades, and Peter Vanderlee, CFA.

Q. What were the overall market conditions during the Fund's reporting period?

A. U.S. equity markets made healthy gains in the twelve-month reporting period ended November 30, 2019, with the broad market S&P 500 Index[i] advancing 16.11%. A market correction in December 2018, driven by fears of a slowing economy and rising interest rates, sent equities down to start the reporting period, in particular cyclical industrials and energy companies. These sectors led a market recovery in the first quarter of 2019, when sentiment toward economic growth improved, driven by positive signs from U.S.-China trade negotiations and a more dovish stance from the Federal Reserve Board (the "Fed")[ii]. Further signs of progress in trade negotiations and hints at more accommodative Fed policy supported positive equity returns in the second quarter of 2019.

In July 2019, the Fed cut the federal funds target rate for the first time in a decade. Cuts again in August and October 2019 left the target rate at a range between 1.50% and 1.75% and brought the Fed in alignment with the accommodative stances of other global central banks. This and a resilient U.S. consumer helped the broad market make moderate gains in the third quarter of 2018, even as U.S.-China trade tensions continued, slowing manufacturing data became more worrisome, the yield on the 10-year U.S. Treasury fell and the 2-year/10-year yield curve[iii] inverted. Defensive or yield-driven stocks performed well, with the Utilities, Real Estate and Consumer Staples sectors among market leaders. Continued trade tensions and concerns slowing global growth would curb energy demand weighed on energy and MLP stocks, however, as these sectors decoupled from the broader equity market midyear.

Q. What were the overall market conditions for the MLP sector during the reporting period?

A. Throughout most of the reporting period trade tensions and slowing global growth threatened to curb energy demand, weighing on energy and MLP stocks. The MLP sector traded in line with the Energy sector, although late in the period as interest rates spiked, the more yield-driven midstream MLP sector was more pressured. All told, the Alerian MLP Index[iv] returned -11.00% during the twelve-month reporting period ended November 30, 2019.

U.S. energy production remains robust. The latest data from the U.S. Department of Energy show oil and natural gas production up 9% year-over-year and natural gas liquids production up 6% year-over-year, a decrease from the 15% growth rate in 2018 attributable to the inability of processing, storage and transportation infrastructure to keep up with capacity growth in energy production. Such bottlenecks are what we believe will present growth opportunities for midstream companies in 2020 and 2021. We expect that, as the long list of infrastructure projects currently in various phases of construction comes into service, there will be a re-acceleration of U.S. production growth rates in 2021 — along with a resultant increase in cash flows and decrease in capital expenditures for midstream companies.

The U.S. energy production growth story is increasingly becoming an export story. Looking at natural gas, the U.S. has moved from a net importer of natural gas to a net exporter in a very short time frame. In 2015, the U.S. had net imports of three billion cubic feet ("BCF") per day. This flipped to net exports in early 2017 and presently the U.S. exports five BCF per day into the global natural gas market. This large shift has occurred primarily due to liquefied natural gas ("LNG") exports and to a lesser extent pipeline exports to Mexico. An additional five LNG export facilities are under construction — adding eight BCF per day of export capacity by the end of 2022. Rising U.S. energy exports will require incremental infrastructure and midstream companies are and will continue to be a direct beneficiary of growing U.S. energy exports.

Looking at midstream companies, it is important to understand the shift in the overall business model for these companies today versus a few years ago. The old MLP business model was to pay out effectively all discretionary cash flow to investors with distributions. As such, any growth opportunity — whether building a new asset or acquiring an existing asset — required access to capital markets, both debt and equity — to finance the growth opportunity. This resulted in a seemingly perpetual issuance of equity. This allowed companies to post 10%+ year-over-year growth in distributions to investors. This business model worked until companies lost access to the equity capital markets in 2015. This forced companies to debt finance projects currently under construction. As a result, MLP balance sheets became overleveraged. Elevated balance sheet leverage forced many companies to reduce their distributions/dividends to retain cash flow and pay down debt. This only pushed MLP stock prices even lower.

Roll the calendar forward to 2019 and things are very different. By retaining some discretionary cash flow instead of paying it all out in the form of distributions or dividends, midstream companies have been able to (1) reduce balance sheet leverage, (2) limit equity issuance by using retained cash flow to fund capital spending projects, and (3) increase distribution or dividend coverage ratios. Stronger balance sheets, higher distribution/dividend coverage and lower common equity issuance, in our view, have resulted in a stronger and more stable business model. The only negative offset is slower distribution/dividend growth than prior to the downturn. Yet, we still expect distribution/dividend growth from the sector — just at a slower rate.

Another big change between midstream 2019 and MLP 2015 has been a series of structure simplification transactions. This has taken on many forms (general partner buying out limited partners, limited partners buying out general partners, C-Corp sponsor buying out limited partners, and conversion from partnership to C-Corp structure). In all of them, incentive distribution rights ("IDRs") to general partners were eliminated — resulting in a lower cost of equity capital for the resulting company. There are probably a few more of these simplification strategies yet to be announced. So, we are likely in the seventh inning or so of this recent trend.

With all these business model changes, midstream companies today versus MLPs in 2015 enjoy continued ready access to the debt capital markets, limited needs for equity capital markets, healthier balance sheets, higher distribution/dividend coverage ratios, most IDRs eliminated, and visible cash flow growth from existing backlog of new energy infrastructure projects backed by continued growth in U.S. energy production.

Despite these positive changes, MLP stocks have seen their enterprise value to earnings before interest, taxes and amortization ("EV/EBITDA") multiple erode as companies transitioned to the new business model. C-Corp midstream stocks have also experienced multiple contraction — though not as much as MLP stocks.

Highlighting how extreme the disconnect is between midstream fundamentals and midstream stock prices is the very unusual fact that private market cash flow multiples for midstream assets are higher than public market multiples on similar assets. Private assets almost always trade at discounted multiples to publicly traded assets. As a result of this, private equity has begun using their un-invested funds to buy publicly traded midstream assets. There have been two go-private transactions year-to-date, as private equity firms

Fund overview (cont'd)

are taking Buckeye Partners and Tallgrass Energy private. Importantly, both of these transactions valued the target in the 11x–12x cash flow multiple range that the sector enjoyed in 2017 and 2018. In our view, we will see more such transactions until publicly traded assets trade at a premium or at least parity to private market assets.

Q. How did we respond to these changing market conditions?

A. Our investment approach remained consistent throughout the reporting period. We continued to focus on MLPs and infrastructure companies that are engaged in the midstream space. These companies' income streams are generally less exposed to the volatility of commodity prices and the companies have business models that are largely fee based. We focused on companies with high-quality assets, solid balance sheets and good growth outlooks.

Our view on MLP and energy midstream company fundamentals remains largely intact. Over the long term we expect growing U.S. production of oil and gas, which will necessitate increased infrastructure investment. We expect MLPs to provide this growing infrastructure and expect that growth in infrastructure investment should lead to growing distributions. We believe that MLPs enjoy continued ready access to the debt capital markets, limited needs for equity capital markets, healthier balance sheets, higher distribution/dividend coverage ratios, most IDRs eliminated, and visible cash flow growth from existing backlog of new energy infrastructure projects backed by continued growth in U.S. energy production.

Performance review

For the twelve months ended November 30, 2019, ClearBridge Energy Midstream Opportunity Fund Inc. returned -6.57% based on its net asset value ("NAV")[v] and -8.15% based on its New York Stock Exchange ("NYSE") market price per share. The Alerian MLP Index and the Lipper Energy MLP Closed-End Funds Category Average[vi] returned -11.00% and -11.21%, respectively, over the same time frame. Please note that Lipper performance returns are based on each fund's NAV.

During the twelve-month period, the Fund made distributions to shareholders totaling $0.92 per share, which included a return of capital of $0.58 per share. The performance table shows the Fund's twelve-month total return based on its NAV and market price as of November 30, 2019. **Past performance is no guarantee of future results.**

Performance Snapshot as of November 30, 2019

Price Per Share	12-Month Total Return*
$8.75 (NAV)	-6.57%†
$7.62 (Market Price)	-8.15%‡

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. 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, at NAV.

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

Q. What were the leading contributors to performance?

A. The Liquids Transportation & Storage and Natural Gas Transportation & Storage subsectors contributed positively to absolute performance during the reporting period, as did stock selection and sector allocation. Stock selection in the Liquids Transportation & Storage and Diversified Energy Infrastructure subsectors contributed positively. An underweight to the Gathering/Processing subsector and an overweight to the Natural Gas Transportation & Storage subsector also contributed to returns. In terms of individual Fund holdings, the top contributors to performance for the period were Enbridge, Buckeye Partners, LP, ONEOK, Brookfield Infrastructure Partners LP and TC Pipelines, LP.

Q. What were the leading detractors from performance?

A. The Gathering/Processing subsector was the main detractor from absolute performance during the reporting period. An underweight to the Liquids Transportation & Storage subsector proved detrimental to relative results. In terms of individual Fund holdings, leading detractors from performance for the period included positions in Western Midstream Partners LP, DCP Midstream LP, Energy Transfer, LP, MPLX LP and Plains All American Pipeline, LP.

Q. Were there any significant changes to the Fund during the reporting period?

A. During the reporting period, we established new Fund positions in Enbridge, Kinder Morgan, Rattler Midstream LP and Noble Midstream Partners LP. The most significant positions closed were those in EnLink Midstream Partners, LP, Enbridge Energy Partners, LP and Buckeye Partners, LP. Western Gas Partners, LP (WES) and Western Gas Equity Partners (WGP) completed their simplification process, changing the name of Western Gas Equity Partners to Western Midstream Partners, LP (WES); the Fund received and retained shares of Western Midstream Partners, LP (WES). Andeavor Logistics LP was acquired by holding MPLX LP in an all-stock deal.

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.

Thank you for your investment in ClearBridge Energy Midstream 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,

Michael Clarfeld, CFA
Portfolio Manager
ClearBridge Investments, LLC

Chris Eades
Portfolio Manager
ClearBridge Investments, LLC

Richard A. Freeman
Portfolio Manager
ClearBridge Investments, LLC

Peter Vanderlee

Peter Vanderlee, CFA
Portfolio Manager
ClearBridge Investments, LLC

December 20, 2019

RISKS: *The Fund is a non-diversified, closed-end management investment company designed primarily as a long-term investment and not as a trading vehicle. The Fund is not intended to be* *a complete investment program and, due to the uncertainty inherent in all investments, there can be no assurance that the Fund will achieve its investment objective. The Fund's common stock is traded on the New York Stock Exchange. Similar to stocks, the Fund's share price will fluctuate with market conditions and, at the time of sale, may be worth more or less than the original investment. Shares of closed-end funds often trade at a discount to their net asset value. Because the Fund is non-diversified, it may be more susceptible to economic, political or regulatory events than a diversified fund. The Fund's investments are subject to a number of risks such as stock market risk, MLP and midstream entities risk, market events risk and portfolio management risk. MLP distributions are not guaranteed and there is no assurance that all distributions will be tax deferred. Investments in MLP securities and midstream entities are subject to unique risks. The Fund's concentration of investments in energy-related MLPs and midstream entities subjects it to the risks of MLPs, midstream entities 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.*

Portfolio holdings and breakdowns are as of November 30, 2019 and are subject to change and may not be representative of the portfolio managers' current or future investments. The Fund's top ten holdings (as a percentage of total net assets) as of November 30, 2019 were: Enterprise Products Partners LP (12.0%), Energy Transfer LP (11.4%), Genesis Energy LP (8.0%), Enbridge Inc. (7.8%), Kinder Morgan Inc. (7.3%), Magellan Midstream Partners LP (7.2%), Targa Resources Corp. (7.1%), ONEOK Inc. (7.0%), MPLX LP (6.8%) and Williams Cos. Inc. (6.8%). Please refer to pages 10 through 11 for a list and percentage breakdown of the Fund's holdings.

The mention of sector breakdowns is for informational purposes only and should not be construed as a recommendation to purchase or sell any securities. The information provided regarding such sectors is not a sufficient basis upon which to make an investment decision. Investors seeking financial advice regarding the appropriateness of investing in any securities or investment strategies discussed should consult their financial professional. The Fund's top five sector holdings (as a percentage of net assets) as of November 30, 2019 were: Oil, Gas & Consumable Fuels (44.3%), Diversified Energy Infrastructure (39.2%), Gathering/Processing (20.0%), Liquids Transportation & Storage (16.2%) and Natural Gas Transportation & Storage (9.5%). The Fund's portfolio composition is subject to change at any time.

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] 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.

[ii] The Federal Reserve Board (the "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 yield curve is the graphical depiction of the relationship between the yield on bonds of the same credit quality but different maturities.

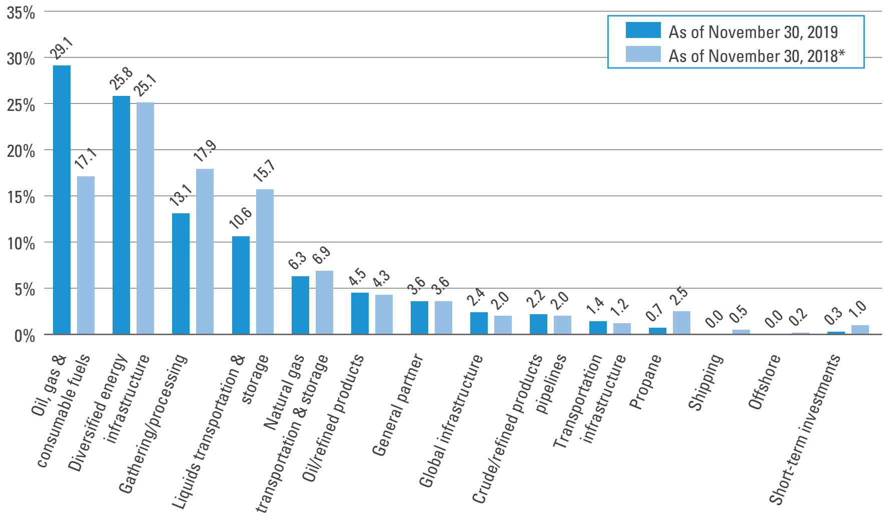
[iv] The Alerian MLP Index is a composite of the fifty most prominent energy master limited partnerships ("MLPs") and is calculated using a float-adjusted, capitalization-weighted methodology.

[v] 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.

[vi] Lipper, Inc., a wholly-owned subsidiary of Reuters, provides independent insight on global collective investments. Returns are based on the twelve-month period ended November 30, 2019, including the reinvestment of all distributions, including returns of capital, if any, calculated among the 22 funds in the Fund's Lipper category.

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 November 30, 2019 and November 30, 2018. The Fund is actively managed. As a result, the composition of the Fund's investments is subject to change at any time.

* Prior year percentages have been restated to reflect correct classifications.

Schedule of investments

November 30, 2019

ClearBridge Energy Midstream Opportunity Fund Inc.

Security	Shares/Units	Value
Master Limited Partnerships — 109.7%		
Crude/Refined Products Pipelines — 3.3%		
BP Midstream Partners LP	1,071,400	$ 15,642,440
Shell Midstream Partners LP	253,200	4,977,912
Total Crude/Refined Products Pipelines		*20,620,352*
Diversified Energy Infrastructure — 39.2%		
Energy Transfer LP	6,038,912	71,319,551
Enterprise Products Partners LP	2,855,747	75,163,261
Genesis Energy LP	2,652,650	50,426,876
Plains All American Pipeline LP	1,562,671	27,190,475
Plains GP Holdings LP, Class A Shares	1,251,465	21,863,094
Total Diversified Energy Infrastructure		*245,963,257*
Gathering/Processing — 20.0%		
CNX Midstream Partners LP	1,085,100	15,733,950
DCP Midstream LP	1,127,976	23,811,573
Enable Midstream Partners LP	2,067,075	18,996,419
EQM Midstream Partners LP	292,920	6,786,957
Noble Midstream Partners LP	349,640	7,289,994
Noble Midstream Partners LP	476,980	9,570,861 (a)(b)
Rattler Midstream LP	675,000	10,739,250
Summit Midstream Partners LP	382,680	1,171,001
Western Midstream Partners LP	1,770,456	31,390,185
Total Gathering/Processing		*125,490,190*
General Partner — 5.5%		
Tallgrass Energy LP, Class A Shares	1,934,210	*34,641,701*
Global Infrastructure — 3.7%		
Brookfield Infrastructure Partners LP	444,550	*23,161,055*
Liquids Transportation & Storage — 16.2%		
Delek Logistics Partners LP	293,030	9,412,124
Global Partners LP	173,670	3,476,873
Holly Energy Partners LP	513,232	11,475,868
Magellan Midstream Partners LP	775,410	45,338,223
NuStar Energy LP	503,470	14,207,923
PBF Logistics LP	855,580	17,496,611
Total Liquids Transportation & Storage		*101,407,622*
Natural Gas Transportation & Storage — 9.5%		
Cheniere Energy Partners LP	778,300	30,252,521
TC PipeLines LP	755,630	29,462,014
Total Natural Gas Transportation & Storage		*59,714,535*

See Notes to Financial Statements.

ClearBridge Energy Midstream Opportunity Fund Inc.

Security		Shares/Units	Value
Oil, Gas & Consumable Fuels — 4.4%			
Enviva Partners LP		665,000	$ 22,982,400
Green Plains Partners LP		330,000	4,438,500
Total Oil, Gas & Consumable Fuels			*27,420,900*
Oil/Refined Products — 6.8%			
MPLX LP		1,812,061	*42,855,243*
Propane — 1.1%			
Suburban Propane Partners LP		320,060	*7,175,745*
Total Master Limited Partnerships (Cost — $753,119,317)			**688,450,600**
		Shares	
Common Stocks — 42.0%			
Energy — 39.9%			
Oil, Gas & Consumable Fuels — 39.9%			
Antero Midstream Corp.		756,886	3,466,538
Enbridge Inc.		1,286,249	48,877,462
Kinder Morgan Inc.		2,328,000	45,652,080
ONEOK Inc.		616,717	43,817,743
SemGroup Corp., Class A Shares		977,974	15,031,460
Targa Resources Corp.		1,217,353	44,469,905
TC Energy Corp.		131,800	6,712,574
Williams Cos. Inc.		1,869,675	42,479,016
Total Energy			**250,506,778**
Industrials — 2.1%			
Transportation Infrastructure — 2.1%			
Macquarie Infrastructure Corp.		318,880	**13,377,016**
Total Common Stocks (Cost — $283,664,745)			**263,883,794**
Total Investments before Short-Term Investments (Cost — $1,036,784,062)			**952,334,394**
	Rate		
Short-Term Investments — 0.4%			
JPMorgan 100% U.S. Treasury Securities Money Market Fund, Institutional Class (Cost — $2,648,086)	1.470%	2,648,086	**2,648,086**
Total Investments* — 152.1% (Cost — $1,039,432,148)			**954,982,480**
Mandatory Redeemable Preferred Stock, at Liquidation Value — (7.6)%			(48,000,000)
Liabilities in Excess of Other Assets — (44.5)%			(279,260,959)
Total Net Assets Applicable to Common Shareholders — 100.0%			**$ 627,721,521**

* The entire portfolio is subject to lien, granted to the lender and Senior Note holders, to the extent of the borrowings outstanding and any additional expenses.

[a] Security is valued in good faith in accordance with procedures approved by the Board of Directors (Note 1).

[b] Restricted security (Note 10).

See Notes to Financial Statements.

Statement of assets and liabilities

November 30, 2019

Assets:	
Investments, at value (Cost — $1,039,432,148)	$ 954,982,480
Dividends and distributions receivable	943,368
Income tax receivable	474,020
Interest receivable	22,849
Prepaid expenses	105,804
Total Assets	***956,528,521***
Liabilities:	
Senior Secured Notes (net of deferred debt issuance and offering costs of $675,019) (Note 6)	246,324,981
Mandatory Redeemable Preferred Stock ($100,000 liquidation value per share; 480 shares issued and outstanding) (net of deferred offering costs of $423,919) (Note 7)	47,576,081
Loan payable (Note 5)	31,500,000
Interest payable	2,047,793
Investment management fee payable	792,254
Distributions payable to Mandatory Redeemable Preferred Stockholders	97,194
Directors' fees payable	15,111
Accrued expenses	453,586
Total Liabilities	***328,807,000***
Total Net Assets Applicable to Common Shareholders	**$ 627,721,521**
Net Assets Applicable to Common Shareholders:	
Common stock par value ($0.001 par value; 71,713,987 shares issued and outstanding; 100,000,000 common shares authorized)	$ 71,714
Paid-in capital in excess of par value	820,639,900
Total distributable earnings (loss), net of income taxes	(192,990,093)
Total Net Assets Applicable to Common Shareholders	**$ 627,721,521**
Common Shares Outstanding	71,713,987
Net Asset Value Per Common Share	$8.75

See Notes to Financial Statements.

Statement of operations

For the Year Ended November 30, 2019

Investment Income:	
Dividends and distributions	$ 87,730,090
Return of capital (Note 1(g))	(75,256,660)
Net Dividends and Distributions	**12,473,430**
Interest	216,947
Less: Foreign taxes withheld	(521,250)
Total Investment Income	***12,169,127***
Expenses:	
Interest expense (Notes 5 and 6)	12,191,559
Investment management fee (Note 2)	10,978,586
Distributions to Mandatory Redeemable Preferred Stockholders (Notes 1 and 7)	2,025,096
Audit and tax fees	272,984
Commitment fees (Note 5)	262,442
Amortization of debt issuance and offering costs (Note 6)	213,043
Directors' fees	209,238
Transfer agent fees	118,674
Amortization of preferred stock offering costs (Note 7)	115,198
Legal fees	88,386
Fund accounting fees	72,099
Stock exchange listing fees	34,988
Shareholder reports	26,586
Rating agency fees	19,967
Franchise taxes	12,274
Custody fees	7,594
Insurance	6,738
Miscellaneous expenses	122,064
Total Expenses	***26,777,516***
Less: Fee waivers and/or expense reimbursements (Note 2)	(548,929)
Net Expenses	***26,228,587***
Net Investment Loss, before income taxes	**(14,059,460)**
Net current and deferred tax benefit (Note 12)	4,010,581
Net Investment Loss, net of income taxes	**(10,048,879)**
Realized and Unrealized Gain (Loss) on Investments (Notes 1, 3 and 12):	
Net Realized Gain (Loss) From:	
Investment transactions	(42,000,010)
Deferred tax benefit (Note 12)	8,689,676
Net Realized Loss, net of income taxes	***(33,310,334)***
Change in Net Unrealized Appreciation (Depreciation) From:	
Investments	7,173,281
Deferred tax expense (Note 12)	(6,279,777)
Change in Net Unrealized Appreciation (Depreciation), net of income taxes	***893,504***
Net Loss on Investments, net of income taxes	**(32,416,830)**
Decrease in Net Assets Applicable to Common Shareholders From Operations	**$(42,465,709)**

See Notes to Financial Statements.

Statements of changes in net assets

For the Years Ended November 30,	2019	2018
Operations:		
Net investment income (loss), net of income taxes	$ (10,048,879)	$ 1,984,897
Net realized gain (loss), net of income taxes	(33,310,334)	10,589,861
Change in net unrealized appreciation (depreciation), net of income taxes	893,504	(17,126,179)
Decrease in Net Assets Applicable to Common Shareholders From Operations	***(42,465,709)***	***(4,551,421)***
Distributions to Common Shareholders From (Note 1):		
Dividends	(24,170,779)	(13,290,715)
Return of capital	(41,806,089)	(39,605,970)
Decrease in Net Assets From Distributions to Common Shareholders	***(65,976,868)***	***(52,896,685)***
Fund Share Transactions:		
Net assets of shares issued in connection with merger (0 and 40,517,975 shares issued, respectively) (Note 11)	—	439,010,871
Cost of aggregate fractional shares repurchased (0 and 44 aggregate fractional shares repurchased, respectively) (Note 11)	—	(481)
Increase in Net Assets From Fund Share Transactions	***—***	***439,010,390***
Increase (Decrease) in Net Assets Applicable to Common Shareholders	***(108,442,577)***	***381,562,284***
Net Assets Applicable to Common Shareholders:		
Beginning of year	736,164,098	354,601,814
End of year	**$ 627,721,521**	**$736,164,098**

See Notes to Financial Statements.

Statement of cash flows

For the Year Ended November 30, 2019

Increase (Decrease) in Cash:	
Cash Provided (Used) by Operating Activities:	
Net decrease in net assets applicable to common shareholders resulting from operations	$ (42,465,709)
Adjustments to reconcile net decrease in net assets resulting from operations to net cash provided (used) by operating activities:	
Purchases of portfolio securities	(311,554,383)
Sales of portfolio securities	371,104,069
Net purchases, sales and maturities of short-term investments	9,246,699
Return of capital	75,256,660
Increase in dividends and distributions receivable	(669,852)
Decrease in interest receivable	10,842
Increase in prepaid expenses	(20,643)
Decrease in income tax receivable	2,659,523
Amortization of preferred stock offering costs	115,198
Amortization of deferred debt issuance and offering costs	213,043
Decrease in investment management fee payable	(144,855)
Decrease in Directors' fees payable	(13,167)
Decrease in interest payable	(21,495)
Decrease in accrued expenses	(211,439)
Decrease in distributions payable to Mandatory Redeemable Preferred Stockholders	(1,694)
Decrease in deferred tax liability	(8,819,221)
Net realized loss on investments	42,000,010
Change in net unrealized appreciation (depreciation) of investments	(7,173,281)
Net Cash Provided by Operating Activities*	***129,510,305***
Cash Flows From Financing Activities:	
Distributions paid on common stock	(65,976,868)
Proceeds from loan facility borrowings	51,000,000
Repayment of loan facility borrowings	(115,500,000)
Net Cash Used in Financing Activities	***(130,476,868)***
Net Decrease in Cash and Restricted Cash	**(966,563)**
Cash and restricted cash at beginning of year	966,563
Cash and restricted cash at end of year	—

* Included in operating expenses is cash of $12,452,484 paid for interest and commitment fees on borrowings and $260,783 refunded for income taxes, net of income taxes paid.

The following table provides a reconciliation of cash and restricted cash reported within the Statement of Assets and Liabilities that sums to the total of such amounts shown on the Statement of Cash Flows.

	November 30, 2019
Cash	—
Restricted cash	—
Total cash and restricted cash shown in the Statement of Cash Flows	**—**

See Notes to Financial Statements.

Financial highlights

For a common share of capital stock outstanding throughout each year ended November 30:	2019[1]	2018[1]	2017[1]	2016[1]	2015[1]
Net asset value, beginning of year	$10.27	$11.37	$13.84	$15.25	$25.80
Income (loss) from operations:					
Net investment income (loss)	(0.14)	0.06	(0.20)	(0.40)	(0.18)
Net realized and unrealized gain (loss)	(0.46)	0.12†	(0.99)	0.27	(8.86)
Total income (loss) from operations	***(0.60)***	***0.18***	***(1.19)***	***(0.13)***	***(9.04)***
Less distributions to common shareholders from:					
Dividends	(0.34)	(0.32)	—	—	—
Return of capital	(0.58)	(0.96)	(1.28)	(1.28)	(1.51)
Total distributions to common shareholders	***(0.92)***	***(1.28)***	***(1.28)***	***(1.28)***	***(1.51)***
Net asset value, end of year	$8.75	$10.27	$11.37	$13.84	$15.25
Market price, end of year	$7.62	$9.23	$10.47	$12.83	$14.71
Total return, based on NAV[2,3]	***(6.57)%***	***0.67%***	***(9.34)%***	***0.68%***	***(36.35)%***
Total return, based on Market Price[4]	***(8.15)%***	***(0.87)%***	***(9.54)%***	***(2.83)%***	***(32.14)%***
Net assets applicable to common shareholders, end of year (millions)	$628	$736	$355	$432	$473
Ratios to average net assets:					
Management fees	1.50%	1.49%	1.43%	1.43%	1.44%
Other expenses	2.16	2.12	1.72	2.65[5]	1.49
Subtotal	***3.66***	***3.61***	***3.15***	***4.08[5]***	***2.93***
Income tax expenses	—[6]	—[6]	—[6]	0.10	—[6]
Total gross expenses	***3.66***	***3.61***	***3.15***	***4.18[5]***	***2.93***
Total net expenses	***3.59***	***3.60***	***3.15***	***4.18[5]***	***2.93***
Net investment income (loss), net of income taxes	(1.37)	0.52	(1.45)	(3.12)[5]	(0.84)
Portfolio turnover rate	**29%**	**14%**	**16%**	**23%**	**8%**
Supplemental data:					
Loan and Debt Issuance Outstanding, End of Year (000s)	$278,500	$343,000	$158,000	$147,000	$235,000
Asset Coverage Ratio for Loan and Debt Issuance Outstanding[7]	343%	329%	339%	409%	331%
Asset Coverage, per $1,000 Principal Amount of Loan and Debt Issuance Outstanding[7]	$3,426	$3,286	$3,390	$4,093	$3,312
Weighted Average Loan and Debt Issuance (000s)	$318,462	$163,197	$157,819	$137,883	$247,384

See Notes to Financial Statements.

For a common share of capital stock outstanding throughout each year ended November 30:	2019[1]	2018[1]	2017[1]	2016[1]	2015[1]
Weighted Average Interest Rate on Loan and Debt Issuance	3.83%	3.51%	3.32%	4.38%[8]	2.76%
Mandatory Redeemable Preferred Stock at Liquidation Value, End of Year (000s)	$48,000	$48,000	$23,000	$23,000	$70,000
Asset Coverage Ratio for Mandatory Redeemable Preferred Stock[9]	292%	288%	296%	354%	255%
Asset Coverage, per $100,000 Liquidation Value per Share of Mandatory Redeemable Preferred Stock[9]	$292,258	$288,277	$295,913	$353,918	$255,188

† Calculation of the net gain per share (both realized and unrealized) does not correlate to the aggregate realized and unrealized losses presented in the Statement of Operations due to the change in fund shares outstanding resulting from the transfer of assets in relation to fluctuating market values of the investment of the Fund.

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

2 Performance figures may reflect compensating balance arrangements, fee waivers and/or expense reimbursements. In the absence of compensating balance arrangements, fee waivers and/or expense reimbursements, the total return would have been lower. Past performance is no guarantee of future results.

3 The total return calculation assumes that distributions are reinvested at NAV. Past performance is no guarantee of future results.

4 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.

5 Includes non-recurring prepayment penalties, the write off of debt issuance and offering costs and the write off of preferred stock offering costs recognized during the period totaling 0.66% of average assets.

6 For the years ended November 30, 2019, 2018, 2017 and 2015, the net income tax benefit was 0.88%, 3.08%, 4.20% and 23.47%, respectively. The net income tax benefit is not reflected in the Fund's expense ratios.

7 Represents value of net assets plus the loan outstanding, debt issuance outstanding and mandatory redeemable preferred stock at the end of the period divided by the loan and debt issuance outstanding at the end of the period.

8 Includes prepayment penalties recognized during the period.

9 Represents value of net assets plus the loan outstanding, debt issuance outstanding and mandatory redeemable preferred stock at the end of the period divided by the loan, debt issuance and mandatory redeemable preferred stock outstanding at the end of the period.

See Notes to Financial Statements.

Notes to financial statements

1. Organization and significant accounting policies

ClearBridge Energy Midstream Opportunity Fund Inc. (the "Fund") was incorporated in Maryland on April 5, 2011 and is registered as 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 long-term investors a high level of total return with an emphasis on cash distributions. There can be no assurance that the Fund will achieve its investment objective. On October 31, 2019, the Board of Directors of the Fund approved amendments to the Fund's bylaws. The amended and restated bylaws were subsequently filed on Form 8-K and are available on the Securities and Exchange Commission's website at www.sec.gov.

The Fund seeks to achieve its objective by investing primarily in energy midstream entities. Under normal market conditions, the Fund invests at least 80% of its Managed Assets in energy midstream entities including entities structured as both partnerships and corporations (the 80% policy). For purposes of the 80% policy, the Fund considers investments in midstream entities as those entities that provide midstream services including the gathering, transporting, processing, fractionation, storing, refining, and distribution of oil, natural gas liquids and natural gas. The Fund considers an entity to be within the Energy sector if it derives at least 50% of its revenues from the business of exploring, developing, producing, gathering, transporting, processing, fractionating, storing, refining, distributing, mining or marketing natural gas, natural gas liquids (including propane), crude oil, refined petroleum products or coal. "Managed Assets" means net assets plus the amount of borrowings and assets attributable to any preferred stock of the Fund that may be outstanding.

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. The valuations for fixed income securities (which may include, but are not limited to, corporate, government, municipal, mortgage-backed, collateralized mortgage obligations and asset-backed securities) and certain derivative instruments are typically the prices supplied by independent third party pricing services, which may use market prices or broker/dealer quotations or a variety of valuation techniques and methodologies. The independent third party pricing services use inputs that are observable such as issuer details, interest rates, yield curves, prepayment speeds, credit risks/spreads, default rates and quoted prices for similar securities. Investments in open-end funds are valued at the closing net asset value per share of each fund on the day of valuation. When the Fund holds securities or other assets that are denominated in a foreign currency, the Fund will normally use the currency exchange rates as of 4:00 p.m. (Eastern Time). If independent third party pricing services are unable to supply prices for a portfolio investment, or if the prices supplied are deemed by the manager to be unreliable, the market price may be determined by the manager using quotations from one or more broker/dealers or at the transaction price if the security has recently been purchased and no value has yet been obtained from a pricing service or pricing broker. 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.

The Board of Directors is responsible for the valuation process and has delegated the supervision of the daily valuation process to the Legg Mason North Atlantic Fund Valuation Committee (the "Valuation Committee"). The Valuation Committee, pursuant to the policies adopted by the Board of Directors, is responsible for making fair value determinations, evaluating the effectiveness of the Fund's pricing policies, and reporting to the Board of Directors. When determining the reliability of third party pricing information for investments owned by the Fund, the Valuation Committee, among other things, conducts due diligence reviews of pricing vendors, monitors the daily change in prices and reviews transactions among market participants.

The Valuation Committee will consider pricing methodologies it deems relevant and appropriate when making fair value determinations. Examples of possible methodologies include, but are not limited to, multiple of earnings; discount from market of a similar freely traded security; discounted cash-flow analysis; book value or a multiple thereof; risk premium/yield analysis; yield to maturity; and/or fundamental investment analysis. The Valuation Committee will also consider factors it deems relevant and appropriate in light of the facts and circumstances. Examples of possible factors include, but are not limited to, the type of security; the issuer's financial statements; the purchase price of the security; the discount from market value of unrestricted securities of the same class at the time of purchase; analysts' research and observations from financial institutions; information regarding any transactions or offers with respect to the security; the existence of merger proposals or tender offers affecting the security; the price and extent of public trading in similar securities of the issuer or comparable companies; and the existence of a shelf registration for restricted securities.

For each portfolio security that has been fair valued pursuant to the policies adopted by the Board of Directors, the fair value price is compared against the last available and next available market quotations. The Valuation Committee reviews the results of such back testing monthly and fair valuation occurrences are reported to the Board of Directors quarterly.

Notes to financial statements (cont'd)

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.

GAAP establishes a disclosure hierarchy that categorizes the inputs to valuation techniques used to value assets and liabilities at measurement date. These inputs are summarized in the three broad levels listed 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 methodologies used to value securities are not necessarily an indication of the risk associated with investing in those securities.

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

ASSETS

Description	Quoted Prices (Level 1)	Other Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Long-Term Investments†:				
Master Limited Partnerships:				
Gathering/Processing	$115,919,329	$9,570,861	—	$125,490,190
Other Master Limited Partnerships	562,960,410	—	—	562,960,410
Common Stocks	263,883,794	—	—	263,883,794
Total Long-Term Investments	942,763,533	9,570,861	—	952,334,394
Short-Term Investments†	2,648,086	—	—	2,648,086
Total Investments	**$945,411,619**	**$9,570,861**	**—**	**$954,982,480**

† See Schedule of Investments for additional detailed categorizations.

(b) 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, interest payables and the aggregate liquidation value (i.e., $100,000 per outstanding share) of the Mandatory Redeemable Preferred Stock (“MRPS”)), net of income taxes, by the total number of shares of common stock outstanding.

(c) 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, as amended (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.

(d) Foreign investment risks. The Fund’s investments in foreign securities may involve risks not present in domestic investments. Since securities may be denominated in foreign currencies, may require settlement in foreign currencies or pay interest or dividends in foreign currencies, changes in the relationship of these foreign currencies to the U.S. dollar can significantly affect the value of the investments and earnings of the Fund. Foreign investments may also subject the Fund to foreign government exchange restrictions, expropriation, taxation or other political, social or economic developments, all of which affect the market and/or credit risk of the investments.

(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 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) Security transactions and investment income. Security transactions are accounted for on a trade date basis. Interest income (including interest income from payment-in-kind securities), adjusted for amortization of premium and accretion of discount, is recorded on the accrual basis. Dividend income is recorded on the ex-dividend date for dividends received in cash and/or securities. Foreign dividend income is recorded on the ex-dividend date or as soon as practicable after the Fund determines the existence of a dividend declaration after exercising reasonable due diligence. 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.

(g) 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 the MLPs after their tax reporting periods are concluded.

For the year ended November 30, 2019, the Fund estimated that approximately 86% of the MLP distributions received would be treated as a return of capital. The Fund recorded as return of capital the amount of $75,018,359 of dividends and distributions received from its investments.

Additionally, the Fund recorded revisions to the return of capital estimates from the year ended November 30, 2018 in the amount of a $238,301 decrease in dividends and distributions received from investments.

(h) 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.

(i) Distributions to shareholders. Distributions to common shareholders 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 shareholders will be either a dividend (ordinary income), distribution (return of capital) or combination of both. This estimate is based on the Fund's operating results during the year. The Fund has generated sufficient current year earnings and profits for tax purposes from gains realized on the sale of its MLP investments such that approximately 37% of the distributions paid during the current year will be treated as dividend income. Because the Fund is taxed as a "C" Corporation, the distributions paid by the Fund are considered to be dividend income to the extent that the distributions are paid out of the Fund's current net income and realized capital gains. The actual tax characterization of the common stock distributions made during the current year will not be determined until after the end of the fiscal year when the Fund can determine its earnings and profits and, therefore, may differ from the preliminary estimates.

Distributions to holders of MRPS are accrued on a daily basis as described in Note 7 and are treated as an operating expense as required by GAAP. For tax purposes, the payments made to the holders of the Fund's MRPS are treated as a dividend (ordinary income) or distribution (return of capital) similar to the treatment of distributions made to common shareholders as described above. The Fund anticipates that 100% of its current year distribution to the MRPS shareholders will be treated as dividend income. The actual tax characterization of the MRPS distributions made during the current year will not be determined until after the end of the fiscal year when the Fund can determine its earnings and profits and, therefore, may differ from the preliminary estimates.

(j) 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.

(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. The Fund, and entities in which the Fund invests, may be subject to audit by the Internal Revenue Service or other applicable tax authorities. The Fund's taxable income or tax liability for prior taxable years could be adjusted if there is an audit of the Fund, or of any entity that is treated as a partnership for tax purposes in which the Fund holds an equity interest. The Fund may be required to pay tax, as well as interest and penalties, in connection with such an adjustment.

Deferred income taxes reflect (i) taxes on unrealized gains (losses), which are attributable to the temporary difference between fair market value and book 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, as applicable, (iii) the net tax benefit of accumulated net operating losses, capital losses and tax credit carryforwards. 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 Financial Accounting Standards Board ("FASB"), Accounting Standards Codification Topic 740, Income Taxes ("ASC 740") 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 allocations of taxable income and future cash distributions from the Fund's MLP holdings), the duration of statutory carryforward periods and the associated risk that net operating losses, capital losses and tax credit carryforwards may expire unused.

For all open tax years 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 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 2015 through 2018 tax years remain open and subject to examination by tax jurisdictions.

(l) Reclassification. GAAP requires that certain components of net assets be reclassified to reflect permanent differences between financial and tax reporting. These reclassifications have no effect on net assets or net asset value per share. During the current year, the Fund had no reclassifications.

2. Investment management agreement and other transactions with affiliates

Legg Mason Partners Fund Advisor, LLC ("LMPFA") is the Fund's investment manager and ClearBridge Investments, 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 LMPFA 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. For its services, LMPFA pays ClearBridge monthly an aggregate fee equal to 70% of the net management fee it receives from the Fund.

Effective November 19, 2018, LMPFA agreed to a waiver in the amount of 0.05% of the investment management fee that is paid to it by the Fund. The waiver will extend through December 1, 2020.

During periods in which the Fund utilizes financial leverage, the fees paid to LMPFA will be higher than if the Fund did not utilize leverage because the fees are calculated as a percentage of the Fund's assets, including those investments purchased with leverage.

During the year ended November 30, 2019, fees waived and/or expenses reimbursed amounted to $548,929.

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 year ended November 30, 2019, the aggregate cost of purchases and proceeds from sales of investments (excluding short-term investments) were as follows:

Purchases	$311,554,383
Sales	371,104,069

4. Derivative instruments and hedging activities

During the year ended November 30, 2019, the Fund did not invest in derivative instruments.

5. Loan

The Fund has a revolving credit agreement with The Bank of Nova Scotia ("Credit Agreement"), which allows the Fund to borrow up to an aggregate amount of $175,000,000 and renews daily for a 179-day term, unless notice to the contrary is given to the Fund. The Fund pays a commitment fee on the unutilized portion of the loan commitment amount at an annual rate of 0.25%, except that the commitment fee is 0.15% in the event that the aggregate outstanding principal balance of the loan is equal to or greater than 75% of $175,000,000. The interest on the loan is calculated at a variable rate based on LIBOR plus any applicable margin. Securities held by the Fund are subject to a lien, granted to The Bank of Nova Scotia, to the extent of the borrowing outstanding and any additional expenses. The Fund's Credit Agreement contains customary covenants that, among other things, may limit the Fund's ability to pay distributions in certain circumstances, incur additional debt, change its fundamental investment policies and engage in certain transactions, including mergers and consolidations and require asset coverage ratios in addition to those required by the 1940 Act. In addition, the Credit Agreement may be subject to early termination under certain conditions and may contain other provisions that could limit the Fund's ability to utilize borrowing under the agreement. At November 30, 2019, the Fund had $31,500,000 of borrowings outstanding per this Credit Agreement. Interest expense related to this loan for the year ended November 30, 2019 was $2,193,025. For the year ended November 30, 2019, the Fund incurred commitment fees of $262,442. For the year ended November 30, 2019, the Fund had an average daily loan balance outstanding of $71,461,644 and the weighted average interest rate was 3.07%.

Notes to financial statements (cont'd)

6. Senior secured notes

At November 30, 2019, the Fund had $247,000,000 aggregate principal amount of fixed-rate senior secured notes ("Senior Notes") outstanding. Interest expense related to the Senior Notes for the year ended November 30, 2019 was $9,998,534. Costs incurred by the Fund in connection with the Senior Notes are recorded as a deferred charge and are amortized over the life of the notes. Securities held by the Fund are subject to a lien, granted to the Senior Notes holders, to the extent of the borrowings outstanding and any additional expenses. The Senior Notes holders and the lender have equal access to the lien (See Note 5).

The table below summarizes the key terms of each series of Senior Notes at November 30, 2019.

Security	Amount	Rate	Maturity	Estimated Fair Value
Senior secured notes:				
Series A	$ 27,420,382	3.27%	February 7, 2020	$ 27,567,952
Series B	$ 34,471,338	3.87%	February 7, 2023	$ 35,560,069
Series C	$ 41,522,293	4.02%	February 7, 2025	$ 43,903,287
Series D	$ 15,668,790	3.33%	August 26, 2022	$ 15,923,220
Series E	$ 3,917,197	3.76%	August 26, 2026	$ 4,120,952
Series F	$ 33,695,652	3.89%	October 15, 2020	$ 34,074,310
Series G	$ 47,847,826	4.51%	October 15, 2023	$ 50,964,725
Series H	$ 42,456,522	4.66%	October 15, 2025	$ 46,574,961
	$247,000,000			**$258,689,476**

The Senior Notes are not listed on any exchange or automated quotation system. The estimated fair value of the Senior Notes was calculated, for disclosure purposes, based on estimated market yields and credit spreads for comparable instruments with similar maturity, terms and structure. The Senior Notes are categorized as Level 3 within the fair value hierarchy.

7. Mandatory redeemable preferred stock

At November 30, 2019, the Fund had 480 shares of fixed rate MRPS outstanding with an aggregate liquidation value of $48,000,000. Offering costs incurred by the Fund in connection with the MRPS issuance are being amortized to expense over the respective life of each series of MRPS.

The table below summarizes the key terms of each series of the MRPS at November 30, 2019.

Series	Term Redemption Date	Rate	Shares	Liquidation Preference Per Share	Aggregate Liquidation Value	Estimated Fair Value
Series A	3/26/2020	3.69%	49	$100,000	$ 4,900,000	$ 4,914,432
Series B	3/28/2022	4.07%	41	$100,000	$ 4,100,000	$ 4,151,323
Series C	3/26/2024	4.26%	140	$100,000	$14,000,000	$14,434,221
Series D	7/23/2024	4.37%	30	$100,000	$ 3,000,000	$ 3,128,149
Series E	7/23/2026	4.55%	70	$100,000	$ 7,000,000	$ 7,415,091
Series F	8/7/2022	4.01%	41	$100,000	$ 4,100,000	$ 4,169,202
Series G	8/7/2024	4.30%	109	$100,000	$10,900,000	$11,331,084
					$48,000,000	**$49,543,502**

The MRPS are not listed on any exchange or automated quotation system. The estimated fair value of the MRPS was calculated, for disclosure purposes, based on estimated market yields and credit spreads for comparable instruments with similar maturity, terms and structure. The MRPS are categorized as Level 3 within the fair value hierarchy.

Holders of MRPS are entitled to receive quarterly cumulative cash dividends payable on the first business day following each quarterly dividend date (February 15, May 15, August 15 and November 15). In the event of a rating downgrade of any series of the MRPS below "A" by Fitch Ratings Inc., the applicable dividend rate will increase, according to a predetermined schedule, by 0.5% to 4.0%.

The MRPS rank senior to the Fund's outstanding common stock and on parity with any other preferred stock. The Fund may, at its option, redeem the MRPS, in whole or in part, at the liquidation preference amount plus all accumulated but unpaid dividends plus the make whole amount equal to the discounted value of the remaining scheduled payments. If the Fund fails to maintain a total leverage (debt and preferred stock) asset coverage ratio of at least 225% or is in default of specified rating agency requirements, the MRPS are subject to mandatory redemption under certain provisions.

The Fund may not declare dividends or make other distributions on shares of its common stock unless the Fund has declared and paid full cumulative dividends on the MRPS, due on or prior to the date of the common stock dividend or distribution, and meets the MRPS asset coverage and rating agency requirements.

The holders of the MRPS have one vote per share and vote together with the holders of common stock of the Fund as a single class except on matters affecting only the holders of MRPS or the holders of common stock. Pursuant to the 1940 Act, holders of the MRPS have the right to elect two Directors of the Fund, voting separately as a class.

Notes to financial statements (cont'd)

8. Distributions to common shareholders subsequent to November 30, 2019

The following distribution to common shareholders has been declared by the Fund's Board of Directors and is payable subsequent to the period end of this report:

Record Date	Payable Date	Amount
2/21/2020	2/28/2020	$0.2300

9. Stock repurchase program

On November 16, 2015, the Fund announced that the Fund's Board of Directors (the "Board") had authorized the Fund to repurchase in the open market up to approximately 10% of the Fund's outstanding common stock when the Fund's shares are trading at a discount to net asset value. The Board has directed management of the Fund to repurchase shares of common stock at such times and in such amounts as management reasonably believes may enhance stockholder value. The Fund is under no obligation to purchase shares at any specific discount levels or in any specific amounts. During the year ended November 30, 2019, the Fund did not repurchase any shares.

10. Restricted securities

The following Fund investment is restricted as to resale and, in the absence of a readily ascertainable market value, is valued in good faith in accordance with procedures approved by the Board of Directors.

Security	Number of Shares	Acquisition Date	Cost	Fair Value at 11/30/2019	Value Per Share	Percent of Net Assets
Noble Midstream Partners LP	476,980	11/19	$9,873,486	$9,570,861	$20.07	1.52%

11. Transfer of net assets

On November 16, 2018, the Fund acquired the assets and certain liabilities of ClearBridge American Energy MLP Fund Inc. (the "Acquired Fund"), pursuant to a plan of reorganization approved by shareholders of both the Acquired Fund and the Fund. Total shares issued by the Fund and the total net assets of the Acquired Fund and the Fund on the date of the transfer were as follows:

Acquired Fund	Shares Issued by the Fund	Total Net Assets of the Acquired Fund	Total Net Assets of the Fund
ClearBridge American Energy MLP Fund Inc.	40,517,975	$439,010,871	$338,008,552

As part of the reorganization, for each share they held, shareholders of the Acquired Fund received 0.691518 shares of the Fund. The Fund did not issue any fractional shares to shareholders of the Acquired Fund. In lieu thereof, the Fund purchased all fractional shares at the current net asset value of the shares and remitted the cash proceeds to former shareholders of the Acquired Fund in proportion to their fractional shares.

The total net assets of the Acquired Fund before acquisition included a total distributable loss, net of income taxes, of $415,835,940. Total net assets of the Fund immediately after the transfer were $777,019,423. The transaction was structured to qualify as a tax-free reorganization under the Code.

Proforma results of operations of the combined entity for the entire year ended November 30, 2018, as though the acquisition had occurred as of the beginning of the year (rather than on the actual acquisition date), are as follows:

	(Unaudited)
Net investment loss, net of income taxes	$(12,161,122)
Net realized gain, net of income taxes	19,352,654
Change in net unrealized appreciation, net of income taxes	(18,368,798)
Decrease in net assets from operations	**$(11,177,266)**

Because the combined investment portfolios have been managed as a single portfolio since the acquisition was completed, it is not practicable to separate the amounts of revenue and earnings of the Acquired Fund that have been included in the Fund's accompanying Statement of Operations since the close of business on November 16, 2018.

12. Income taxes

On December 22, 2017, the U.S. government signed into law comprehensive tax reform legislation commonly known as the Tax Cuts and Jobs Act of 2017 (the "Tax Act"). The Tax Act makes broad and complex changes to the Code, including but not limited to, (1) reducing the U.S. federal corporate income tax rate from 35% to 21%; (2) repealing the corporate alternative minimum tax ("AMT"); (3) creating a new limitation on the deductibility of business interest expense; and (4) changing the rules related to usage of net operating loss carryforwards. These changes generally go into effect for tax years beginning after December 31, 2017.

The Fund's current and deferred income tax provision for the respective categories on the Statement of Operations are as follows:

	Net Investment Loss	Net Realized Loss	Change in Net Unrealized Appreciation	Total
Current tax expense (benefit)	$ 2,398,741	—	—	$ 2,398,741
Deferred tax expense (benefit)	(6,409,322)	$(8,689,676)	$6,279,777	(8,819,221)
Total tax expense (benefit)	**$(4,010,581)**	**$(8,689,676)**	**$6,279,777**	**$(6,420,480)**

The Fund's federal and state income tax provision consist of the following:

	Federal	State	Total
Current tax expense (benefit)	$ 2,209,986	$ 188,755	$ 2,398,741
Deferred tax expense (benefit)	(7,923,756)	(895,465)	(8,819,221)
Total tax expense (benefit)	**$(5,713,770)**	**$(706,710)**	**$(6,420,480)**

Total income taxes have been computed by applying the U.S. federal statutory income tax rate of 21% plus a blended net state income tax rate of 1.8%. The Fund applied this rate to net investment income (loss) and realized and unrealized gains (losses) on investments before income taxes in computing its total income tax expense (benefit).

During the year, the Fund's combined federal and state income tax rate decreased from 23.2% to 22.8% due to changes in the composition of MLP investments and underlying MLP activity in various state tax jurisdictions. This decrease resulted in the additional income tax expense and corresponding decrease in the Fund's effective tax rate (as there is a loss in net assets from operations before taxes) outlined below.

The provision for income taxes differs from the amount derived from applying the statutory income tax rate to net investment income (loss) and realized and unrealized gains (losses) before income taxes as follows:

Provision at statutory rates	21.00%	$(10,266,100)
State taxes, net of federal tax benefit	1.80%	(879,951)
Non-deductible distributions on MRPS	(1.00)%	487,987
Dividends received deduction	1.23%	(602,530)
Change in valuation allowance	(8.75)%	4,277,777
Change in blended state tax rate from 2.2% to 1.8%	(2.64)%	1,291,629
Provision to return adjustment	1.61%	(787,286)
Other, net	(0.12)%	57,994
Total tax expense (benefit)	**13.13%**	**$ (6,420,480)**

Components of the Fund's net deferred tax asset (liability) as of November 30, 2019 are as follows:

Deferred tax assets	
Net operating loss carryforward	$ 45,581,082
Capital loss carryforward	58,900,470
Unrealized losses on investment securities	19,254,524
Other deferred tax assets	865,992
Deferred tax liabilities	
Basis reduction resulting from differences in the book vs. taxable income received from MLPs	(36,485,514)
Net deferred tax asset (liability) before valuation allowance	88,116,554
Less: Valuation allowance	(88,116,554)
Total net deferred tax asset (liability)	—

At November 30, 2019, the Fund had federal and state net operating loss carryforwards of $196,931,350 and $74,090,546 (net of state apportionment), respectively (deferred tax asset of $45,581,082), including $196,931,350 and $59,508,486 (net of state apportionment) from the Acquired Fund, respectively. Several states compute net operating losses before apportionment, therefore the value of the state net operating loss carryforward disclosed may fluctuate for changes in apportionment factors. Realization of the deferred tax asset related to the net operating loss carryforwards is dependent, in part, on generating sufficient taxable income in each respective jurisdiction prior to expiration of the loss carryforwards. During the year ended November 30, 2019, the Fund utilized $66,615,169 of net operating loss carryforward available from previous years. If not utilized, the federal net operating loss carryforward expires in tax years 2032, 2033 and 2036, and the state net operating loss carryforwards expire in tax years between 2021 and 2037.

Additionally, at November 30, 2019 the Fund had a capital loss carryforward of $258,335,394 (deferred tax asset of $58,900,470), including $159,552,137 from the Acquired Fund, which may be carried forward for 5 years. If not utilized, the capital loss will expire in tax years 2019, 2020 and 2023. For corporations, capital losses can only be used to offset capital gains and cannot be used to offset ordinary income. Therefore, the use of this capital loss carryforward is dependent upon the Fund generating sufficient net capital gains prior to the expiration of the loss carryforward.

As a result of the acquisition discussed in Note 11, the Fund's pre-acquisition loss carryovers are now subject to an annual limitation of approximately $8.0 million under Section 382 of the Code. Additionally, under Section 384 of the Code, the Fund is limited in its ability to use the Acquired Fund's loss carryovers to offset the recognition of its "built-in gains" in assets that existed at the time of the acquisition for a period of five-years.

The amount of net operating loss and capital loss carryforwards differed from the amounts disclosed in the prior year financial statements due to differences between the estimated and actual amounts of taxable income received from the MLPs for the prior year and the acquisition of tax attributes from the Acquired Fund. Additionally, the acquisition caused the taxable year of the Acquired Fund to close, which accelerated by one year the schedule for expiration of its loss carryovers.

Tax carryovers, net of taxes, of $92,650,009 acquired from the Acquired Fund have resulted in the Fund having a net deferred tax asset at November 30, 2019. Significant declines in the fair market value of the Acquired Fund's portfolio of investments, in conjunction with cumulative net operating losses and capital losses incurred and expected to be incurred, resulted in the Acquired Fund recording a full valuation allowance on its net deferred tax asset prior to the acquisition. Based on the Fund's assessment, as described in Note 1(k), and due to limitations imposed under Section 384 as discussed above, it has determined that it is not more likely than not that it will be able to generate significant future taxable income of the appropriate character in order to realize the Acquired Fund's deferred tax assets. Accordingly, the Fund has determined that a valuation allowance on the Acquired Fund's net deferred tax asset should remain at this time.

Additionally, significant declines in the fair market value of the Funds pre-acquisition portfolio of investments, in conjunction with cumulative net operating losses and capital losses incurred and expected to be incurred, have resulted in the Fund having a net deferred tax asset excluding the Acquired Fund as of November 30, 2019. Based on the Fund's assessment, as described in Note 1(k), it has determined that it is not more likely than not that it will be able to generate significant future taxable income of the appropriate character in order to realize its deferred tax assets. Accordingly, the Fund has determined that a full valuation allowance on the combined fund's net deferred tax asset is appropriate at this time.

At November 30, 2019, the cost basis of investments for Federal income tax purposes was $878,571,668. At November 30, 2019, gross unrealized appreciation and depreciation of investments for Federal income tax purposes were as follows:

Gross unrealized appreciation	$153,914,285
Gross unrealized depreciation	(77,503,473)
Net unrealized appreciation (depreciation) before tax	**$ 76,410,812**
Net unrealized appreciation (depreciation) after tax	**$ 58,989,147**

13. Recent accounting pronouncement

The Fund has adopted the disclosure provisions of the Financial Accounting Standards Board Accounting Standards Update No. 2018-13, *Fair Value Measurement (Topic 820) — Disclosure Framework — Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13") which introduces new fair value disclosure requirements as well as eliminates and modifies certain existing fair value disclosure requirements. ASU 2018-13 would be effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years; however, management has elected to early adopt ASU 2018-13. The impact of the Fund's adoption was limited to changes in the Fund's financial statement disclosures regarding fair value, primarily those disclosures related to transfers between levels of the fair value hierarchy.

Report of independent registered public accounting firm

To the Board of Directors and Shareholders of ClearBridge Energy Midstream Opportunity Fund Inc.

Opinion on the Financial Statements

We have audited the accompanying statement of assets and liabilities, including the schedule of investments, of ClearBridge Energy Midstream Opportunity Fund Inc. (the "Fund") as of November 30, 2019, the related statements of operations and cash flows for the year ended November 30, 2019, the statement of changes in net assets for each of the two years in the period ended November 30, 2019, including the related notes, and the financial highlights for each of the three years in the period ended November 30, 2019 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Fund as of November 30, 2019, the results of its operations and its cash flows for the year then ended, the changes in its net assets for each of the two years in the period ended November 30, 2019 and the financial highlights for each of the three years in the period ended November 30, 2019 in conformity with accounting principles generally accepted in the United States of America.

The financial statements of the Fund as of and for the year ended November 30, 2016 and the financial highlights for each of the periods ended on or prior to November 30, 2016 (not presented herein, other than the financial highlights) were audited by other auditors whose report dated January 25, 2017 expressed an unqualified opinion on those financial statements and financial highlights.

Basis for Opinion

These financial statements are the responsibility of the Fund's management. Our responsibility is to express an opinion on the Fund's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Fund in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits of these financial statements in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. Our procedures included confirmation of securities owned as of November 30, 2019 by correspondence with the custodian. We believe that our audits provide a reasonable basis for our opinion.

/s/PricewaterhouseCoopers LLP

Baltimore, Maryland
January 23, 2020

We have served as the auditor of one or more investment companies in Legg Mason investment company group since at least 1973. We have not been able to determine the specific year we began serving as auditor.

Board approval of management and subadvisory agreements (unaudited)

Background

The Investment Company Act of 1940, as amended (the "1940 Act"), requires that the Board of Directors (the "Board") of ClearBridge Energy Midstream Opportunity Fund Inc. (the "Fund"), including a majority of its members who are not considered to be "interested persons" under the 1940 Act (the "Independent Directors") voting separately, approve on an annual basis the continuation of the investment management contract (the "Management Agreement") with the Fund's manager, Legg Mason Partners Fund Advisor, LLC (the "Manager"), and the sub-advisory agreement (the "Sub-Advisory Agreement") with the Manager's affiliate, ClearBridge Investments, LLC (the "Sub-Adviser"). At a meeting (the "Contract Renewal Meeting") held in-person on November 13 and 14, 2019, the Board, including the Independent Directors, considered and approved the continuation of each of the Management Agreement and the Sub-Advisory Agreement for an additional one-year period. To assist in its consideration of the renewal of each of the Management Agreement and the Sub-Advisory Agreement, the Board received and considered a variety of information (together with the information provided at the Contract Renewal Meeting, the "Contract Renewal Information") about the Manager and the Sub-Adviser, as well as the management and sub-advisory arrangements for the Fund and the other closed-end funds in the same complex under the Board's purview (the "Legg Mason Closed-end Funds"), certain portions of which are discussed below. A presentation made by the Manager and the Sub-Adviser to the Board at the Contract Renewal Meeting in connection with the Board's evaluation of each of the Management Agreement and the Sub-Advisory Agreement encompassed the Fund and other Legg Mason Closed-end Funds. In addition to the Contract Renewal Information, the Board received performance and other information throughout the year related to the respective services rendered by the Manager and the Sub-Adviser to the Fund. The Board's evaluation took into account the information received throughout the year and also reflected the knowledge and familiarity gained as members of the Boards of the Fund and other Legg Mason Closed-end Funds with respect to the services provided to the Fund by the Manager and the Sub-Adviser.

At a meeting held by conference call on October 10, 2019, the Independent Directors in preparation for the Contract Renewal Meeting met in a private session with their independent legal counsel to review the Contract Renewal Information concerning the Legg Mason Closed-end Funds, including the Fund, received to date. No representatives of the Manager or the Sub-Adviser participated in this meeting. The discussion below reflects all of these reviews.

The Manager provides the Fund with investment advisory and administrative services pursuant to the Management Agreement and the Sub-Adviser provides the Fund with certain investment sub-advisory services pursuant to the Sub-Advisory Agreement. The discussion below covers both the advisory and administrative functions being rendered by the Manager, each such function being encompassed by the Management Agreement, and the investment sub-advisory functions being rendered by the Sub-Adviser.

Board Approval of Management Agreement and Sub-Advisory Agreement

In its deliberations regarding the renewal of each of the Management Agreement and the Sub-Advisory Agreement, the Board, including the Independent Directors, considered various factors, including those described below.

Nature, Extent and Quality of the Services under the Management Agreement and Sub-Advisory Agreement

The Board received and considered Contract Renewal Information regarding the nature, extent, and quality of services provided to the Fund by the Manager and the Sub-Adviser under the Management Agreement and the Sub-Advisory Agreement, respectively, during the past year. The Board also reviewed Contract Renewal Information regarding the Fund's compliance policies and procedures established pursuant to the 1940 Act.

The Board reviewed the qualifications, backgrounds, and responsibilities of the Fund's senior personnel and the portfolio management team primarily responsible for the day-to-day portfolio management of the Fund. The Board also considered, based on its knowledge of the Manager and its affiliates, the Contract Renewal Information and the Board's discussions with the Manager and the Sub-Adviser at the Contract Renewal Meeting, the general reputation and investment performance records of the Manager and the Sub-Adviser and their affiliates and the financial resources available to the corporate parent of the Manager and the Sub-Adviser, Legg Mason, Inc. ("Legg Mason"), to support their activities in respect of the Fund and the other Legg Mason Closed-end Funds.

The Board considered the responsibilities of the Manager and the Sub-Adviser under the Management Agreement and the Sub-Advisory Agreement, respectively, including the Manager's coordination and oversight of the services provided to the Fund by the Sub-Adviser and other fund service providers. The Management Agreement permits the Manager to delegate certain of its responsibilities, including its investment advisory duties thereunder, provided that the Manager, in each case, will supervise the activities of the delegee. Pursuant to this provision of the Management Agreement, the Manager does not provide day-to-day portfolio management services to the Fund. Rather, portfolio management services for the Fund are provided by the Sub-Adviser pursuant to the Sub-Advisory Agreement.

In reaching its determinations regarding continuation of the Management Agreement and the Sub-Advisory Agreement, the Board took into account that Fund stockholders, in pursuing their investment goals and objectives, likely purchased their shares of the Fund based upon the reputation and the investment style, philosophy and strategy of the Manager and the Sub-Adviser, as well as the resources available to the Manager and the Sub-Adviser.

Board approval of management and subadvisory agreements (unaudited) (cont'd)

The Board concluded that, overall, the nature, extent, and quality of the management and other services provided to the Fund under the Management Agreement and the Sub-Advisory Agreement have been satisfactory under the circumstances.

Fund Performance

The Board received and considered information regarding Fund performance, including information and analyses (the "Broadridge Performance Information") for the Fund, as well as for a group of funds (the "Performance Universe") selected by Broadridge Financial Solutions, Inc. ("Broadridge"), an independent provider of investment company data. The Board was provided with a description of the methodology Broadridge used to determine the similarity of the Fund with the funds included in the Performance Universe. The Performance Universe included the Fund and all leveraged closed-end energy master limited partnership ("MLP") funds, as classified by Broadridge, regardless of asset size. The Performance Universe consisted of twenty-two funds, including the Fund, for the 1-year period ended June 30, 2019; twenty-two funds, including the Fund, for the 3-year period ended on such date; and twenty funds, including the Fund, for the 5-year period ended on such date. The Board noted that it had received and discussed with the Manager and the Sub-Adviser information throughout the year at periodic intervals comparing the Fund's performance against its benchmark and its peer funds as selected by Broadridge.

The Broadridge Performance Information comparing the Fund's performance to that of the Performance Universe based on net asset value per share showed, among other things, that among the funds in the Performance Universe, the Fund's performance was ranked seventh (first being best in these performance rankings) for the 1-year period ended June 30, 2019; fourteenth for the 3-year period ended on such date; and twelfth for the 5-year period ended on such date. The Fund's performance for the 1-year period ended June 30, 2019 was above the median performance for the Performance Universe, while the Fund's performance for each of the 3- and 5-year periods was below the median performance for the Performance Universe. In reviewing the Fund's performance, the Manager noted that a continued focus on fee-based transportation-oriented energy infrastructure should continue to augment the Fund's relative net asset value returns over the long-term. In addition to the Fund's performance relative to the Performance Universe, the Board considered the Fund's performance in absolute terms and the Fund's performance relative to its benchmark. On a net asset value basis, the Fund underperformed its benchmark for each of the 1- and 5-year periods ended June 30, 2019 but outperformed its benchmark for the 3-year period ended on such date.

Based on the reviews and discussions of Fund performance and considering other relevant factors, including an agreement at the Contract Renewal Meeting by the Manager to continue the current voluntary fee waiver of 0.05% through December 1, 2020 (the "Fee Waiver") and other factors noted above, the Board concluded, under the circumstances (including the Fund's limited performance history), that continuation of the Management Agreement and the Sub-Advisory Agreement for an additional one-year period would be consistent with the interests of the Fund and its stockholders.

Management and Sub-Advisory Fees and Expense Ratios

The Board reviewed and considered the management fee (the "Management Fee") payable by the Fund to the Manager under the Management Agreement and the sub-advisory fee (the "Sub-Advisory Fee") payable by the Manager to the Sub-Adviser under the Sub-Advisory Agreement in view of the nature, extent and overall quality of the management, investment advisory and other services provided by the Manager and the Sub-Adviser. The Board noted that the Sub-Advisory Fee is paid by the Manager, not the Fund, and, accordingly, that the retention of the Sub-Adviser does not increase the fees or expenses otherwise incurred by the Fund's stockholders.

Additionally, the Board received and considered information and analyses prepared by Broadridge (the "Broadridge Expense Information") comparing the Management Fee and the Fund's overall expenses with those of funds in an expense group (the "Expense Group") selected and provided by Broadridge. The comparison was based upon the constituent funds' latest fiscal years. The Expense Group consisted of the Fund and nine other leveraged closed-end energy MLP funds, as classified by Broadridge. The ten funds in the Expense Group had average net common share assets ranging from $200.5 million to $887.0 million. Six of the other Expense Group funds were larger than the Fund and three were smaller.

The Broadridge Expense Information, comparing the Management Fee as well as the Fund's actual total expenses to the Fund's Expense Group, showed, among other things, that the Management Fee on a contractual basis was ranked second among the funds in the Expense Group (first being lowest and, therefore, best in these expense component rankings) and was below the Expense Group median for that expense component. The Fund's actual Management Fee (i.e., giving effect to any voluntary fee waivers implemented by the Manager with respect to the Fund and by the managers of the other Expense Group funds) was ranked fifth among the funds in the Expense Group when compared on the basis of common share assets only and was ranked second among the funds in the Expense Group when compared on the basis of common share and leveraged assets. In each case, the Fund's actual Management Fee was below the Expense Group median for that expense component. The Broadridge Expense Information further showed that, among the Expense Group funds, the Fund's actual total expenses ranked ninth whether compared on the basis of common share assets only or on the basis of common share and leveraged assets. In each case the Fund's actual total expenses were above the Expense Group median for that expense component. In reviewing the Broadridge Expense Information comparisons of the Fund's actual total expenses, the Manager noted, among other things, that the Fund's investment-related expenses, including distributions on its then outstanding mandatory redeemable preferred shares ("MRPS") and interest expense on its senior secured notes, were higher than investment-related expenses of most of the other Expense Group funds, which relied more on less costly lines of credit for leverage. The Board noted that the small number of funds in the Expense Group made meaningful expense comparisons difficult. The Board also considered the Manager's agreement to continue the Fee Waiver for an additional year.

The Board also reviewed Contract Renewal Information regarding fees charged by the Manager to other U.S. clients investing primarily in an asset class similar to that of the Fund, including, where applicable, institutional and separate accounts. The Board was advised that the fees paid by such institutional, separate account and other clients (collectively, "institutional clients") generally are lower, and may be significantly lower, than the Management Fee. The Contract Renewal Information generally attributed the fee differential to differences in the scope of services provided to the Fund and to institutional clients. Among other things, institutional clients have fewer compliance, administration and other needs than the Fund and the Fund is subject not only to heightened regulatory requirements relative to institutional clients but also to requirements for listing on the New York Stock Exchange. The Contract Renewal Information noted further that the Fund is provided with administrative services, office facilities, Fund officers (including the Fund's chief executive, chief financial and chief compliance officers), and that the Manager coordinates and oversees the provision of services to the Fund by other fund service providers. The Contract Renewal Information included information regarding management fees paid by open-end mutual funds in the same complex (the "Legg Mason Open-end Funds") and such information indicated that the management fees paid by the Legg Mason Closed-end Funds generally were higher than those paid by the Legg Mason Open-end Funds. The Contract Renewal Information noted that the Legg Mason Closed-end Funds typically incur expenses that usually are not incurred by the Legg Mason Open-end Funds such as those related to the annual stockholder meeting, compliance with securities exchange listing requirements and the management and monitoring of leverage. The Board considered the fee comparisons in view of the different services provided in managing these other types of clients and funds.

Taking all of the above into consideration, the Board determined that the Management Fee and the Sub-Advisory Fee were reasonable in view of the nature, extent and overall quality of the management, investment advisory and other services provided by the Manager and the Sub-Adviser to the Fund under the Management Agreement and the Sub-Advisory Agreement, respectively.

Manager Profitability

The Board, as part of the Contract Renewal Information, received an analysis of the profitability to the Manager and its affiliates in providing services to the Fund for the Manager's fiscal years ended March 31, 2018 and March 31, 2019. The Board also received profitability information with respect to the Legg Mason fund complex as a whole. In addition, the Board received Contract Renewal Information with respect to the Manager's revenue and cost allocation methodologies used in preparing such profitability data. The profitability to the Sub-Adviser was not considered to be a material factor in the Board's considerations since the Sub-Advisory Fee is paid by the Manager, not the Fund. The profitability analysis presented to the Board as part of the Contract Renewal Information indicated that the pre-tax profitability of the Fund to the Manager had decreased in fiscal year 2019 from the level in fiscal year 2018 and remained at a level that the Board did not consider to be excessive in view of judicial guidance and the nature, extent and overall quality of the investment advisory and other services provided to the Fund. The Board took into consideration that the Fee Waiver will reduce the Manager's profitability from the Fund while in effect.

Economies of Scale

The Board received and discussed Contract Renewal Information concerning whether the Manager realizes economies of scale if the Fund's assets grow. The Board noted that because the Fund is a closed-end fund with no current plans to seek additional assets beyond maintaining its dividend reinvestment plan, any significant growth in its assets generally will occur through appreciation in the value of the Fund's investment portfolio, rather than sales of additional shares in the Fund. The Board determined that the Management Fee structure, which incorporates no breakpoints reducing the Management Fee at specified increased asset levels, was appropriate under the circumstances.

Other Benefits to the Manager and the Sub-Adviser

The Board considered other benefits received by the Manager, the Sub-Adviser and their affiliates as a result of their relationship with the Fund and did not regard such benefits as excessive.

* * * * * *

In light of all of the foregoing and other relevant factors, the Board determined, under the circumstances, that continuation of the Management Agreement and the Sub-Advisory Agreement would be consistent with the interests of the Fund and its stockholders and unanimously voted to continue each Agreement for an additional one-year period. No single factor reviewed by the Board was identified by the Board as the principal factor in determining whether to approve continuation of the Management Agreement and the Sub-Advisory Agreement, and each Board member may have attributed different weights to the various factors. The Independent Directors were advised by separate independent legal counsel throughout the process. Prior to the Contract Renewal Meeting, the Board received a memorandum prepared by the Manager discussing its responsibilities in connection with its consideration of the continuation of the Management Agreement and the Sub-Advisory Agreement as part of the Contract Renewal Information and the Independent Directors separately received a memorandum discussing such responsibilities from their independent legal counsel. Prior to voting, the Independent Directors also discussed the proposed continuation of the Management Agreement and the Sub-Advisory Agreement in private sessions with their independent legal counsel at which no representatives of the Manager or the Sub-Adviser were present.

Additional information (unaudited)

Information about Directors and Officers

The business and affairs of ClearBridge Energy Midstream Opportunity Fund Inc. (the "Fund") are conducted by management under the supervision and subject to the direction of its Board of Directors. The business address of each Director is c/o Jane Trust, Legg Mason, 100 International Drive, 11th Floor, Baltimore, Maryland 21202. Information pertaining to the Directors and officers of the Fund is set forth below.

The Fund's annual proxy statement includes additional information about Directors and is available, without charge, upon request by calling the Fund at 1-888-777-0102.

Independent Directors†

Robert D. Agdern

Year of birth	1950
Position(s) held with Fund[1]	Director and Member of Nominating, Audit, Compensation and Pricing and Valuation Committees, and Compliance Liaison, Class III
Term of office[1] and length of time served	Since 2015
Principal occupation(s) during the past five years	Member of the Advisory Committee of the Dispute Resolution Research Center at the Kellogg Graduate School of Business, Northwestern University (2002 to 2016); formerly, Deputy General Counsel responsible for western hemisphere matters for BP PLC (1999 to 2001); Associate General Counsel at Amoco Corporation responsible for corporate, chemical, and refining and marketing matters and special assignments (1993 to 1998) (Amoco merged with British Petroleum in 1998 forming BP PLC)
Number of portfolios in fund complex overseen by Director (including the Fund)	24
Other board memberships held by Director during the past five years	None

Carol L. Colman

Year of birth	1946
Position(s) held with Fund[1]	Director and Member of Nominating, Audit and Compensation Committees, and Chair of Pricing and Valuation Committee, Class I
Term of office[1] and length of time served	Since 2011
Principal occupation(s) during the past five years	President, Colman Consulting Company (consulting)
Number of portfolios in fund complex overseen by Director (including the Fund)	24
Other board memberships held by Director during the past five years	None

Information about Directors and Officers

Independent Directors† (cont'd)

Daniel P. Cronin

Year of birth	1946
Position(s) held with Fund[1]	Director and Member of Audit, Compensation and Pricing and Valuation Committees, and Chair of Nominating Committee, Class I
Term of office[1] and length of time served	Since 2011
Principal occupation(s) during the past five years	Retired; formerly, Associate General Counsel, Pfizer Inc. (prior to and including 2004)
Number of portfolios in fund complex overseen by Director (including the Fund)	24
Other board memberships held by Director during the past five years	None

Paolo M. Cucchi

Year of birth	1941
Position(s) held with Fund[1]	Director and Member of Nominating, Audit, and Pricing and Valuation Committees, and Chair of Compensation Committee, Class I
Term of office[1] and length of time served	Since 2011
Principal occupation(s) during the past five years	Emeritus Professor of French and Italian (since 2014) and formerly, Vice President and Dean of The College of Liberal Arts (1984 to 2009) and Professor of French and Italian (2009 to 2014) at Drew University
Number of portfolios in fund complex overseen by Director (including the Fund)	24
Other board memberships held by Director during the past five years	None

William R. Hutchinson

Year of birth	1942
Position(s) held with Fund[1]	Lead Independent Director and Member of Nominating, Audit, Compensation and Pricing and Valuation Committees, Class II
Term of office[1] and length of time served	Since 2011
Principal occupation(s) during the past five years	President, W.R. Hutchinson & Associates Inc. (consulting) (since 2001)
Number of portfolios in fund complex overseen by Director (including the Fund)	24
Other board memberships held by Director during the past five years	Director (Non-Executive Chairman of the Board (since December 1, 2009)), Associated Banc Corp. (banking) (since 1994)

Independent Directors† (cont'd)

Eileen A. Kamerick

Year of birth	1958
Position(s) held with Fund[1]	Director and Member of Nominating, Compensation and Pricing and Valuation Committees, and Chair of Audit Committee, Class III
Term of office[1] and length of time served	Since 2013
Principal occupation(s) during the past five years	National Association of Corporate Directors Board Leadership Fellow and financial expert (since 2016); Adjunct Professor, The University of Chicago Law School (since 2018); Adjunct Professor, Washington University in St. Louis and University of Iowa law schools (since 2007); formerly, Senior Advisor to the Chief Executive Officer and Executive Vice President and Chief Financial Officer of ConnectWise, Inc. (software and services company) (2015 to 2016); Chief Financial Officer, Press Ganey Associates (health care informatics company) (2012 to 2014); Managing Director and Chief Financial Officer, Houlihan Lokey (international investment bank) (2010 to 2012)
Number of portfolios in fund complex overseen by Director (including the Fund)	24
Other board memberships held by Director during the past five years	Trustee of AIG Funds and Anchor Series Trust (since 2018); Hochschild Mining plc (precious metals company) (since 2016); Director of Associated Banc-Corp (financial services company) (since 2007); Westell Technologies, Inc. (technology company) (2003 to 2016)

Nisha Kumar

Year of birth	1970
Position(s) held with Fund[1]	Director and Member of Nominating, Audit, Compensation and Pricing and Valuation Committees, Class II
Term of office[1] and length of time served	Since 2019
Principal occupation(s) during the past five years	Managing Director and the Chief Financial Officer and Chief Compliance Officer of Greenbriar Equity Group, LP (since 2011); formerly, Chief Financial Officer and Chief Administrative Officer of Rent the Runway, Inc. (2011); Executive Vice President and Chief Financial Officer of AOL LLC, a subsidiary of Time Warner Inc. (2007 to 2009), Member of the Council of Foreign Relations
Number of portfolios in fund complex overseen by Director (including the Fund)	24
Other board memberships held by Director during the past five years	Director of the India Fund, Inc. (since 2016); GB Flow Investment LLC; EDAC Technologies Corp.; Nordco Holdings, LLC; and SEKO Global Logistics Network, LLC; formerly, Director of Aberdeen Income Credit Strategies Fund (2017 to 2018); Director of The Asia Tigers Fund, Inc. (2016 to 2018)

Information about Directors and Officers

Interested Director and Officer

Jane Trust, CFA[2]

Year of birth	1962
Position(s) held with Fund[1]	Director, Chairman, President and Chief Executive Officer, Class II
Term of office[1] and length of time served	Since 2015
Principal occupation(s) during the past five years	Senior Managing Director of Legg Mason & Co., LLC ("Legg Mason & Co.") (since 2018); Managing Director of Legg Mason & Co. (2016 to 2018); Officer and/or Trustee/Director of 145 funds associated with Legg Mason Partners Fund Advisor, LLC ("LMPFA") or its affiliates (since 2015); President and Chief Executive Officer of LMPFA (since 2015); formerly, Senior Vice President of LMPFA (2015); Director of ClearBridge, LLC (formerly, Legg Mason Capital Management, LLC) (2007 to 2014); Managing Director of Legg Mason Investment Counsel & Trust Co. (2000 to 2007)
Number of portfolios in fund complex overseen by Director (including the Fund)	142
Other board memberships held by Director during the past five years	None

Additional Officers

Todd F. Kuehl

Legg Mason
100 International Drive, 9th Floor, Baltimore, MD 21202

Year of birth	1969
Position(s) held with Fund[1]	Chief Compliance Officer
Term of office[1] and length of time served	Since 2017
Principal occupation(s) during the past five years	Managing Director of Legg Mason & Co. (since 2011); Chief Compliance Officer of certain mutual funds associated with Legg Mason & Co. or its affiliates (since 2006); formerly, Chief Compliance Officer of Legg Mason Private Portfolio Group (prior to 2010); formerly, Branch Chief, Division of Investment Management, U.S. Securities and Exchange Commission (2002 to 2006)

Jenna Bailey

Legg Mason
100 First Stamford Place, 5th Floor, Stamford, CT 06902

Year of birth	1978
Position(s) held with Fund[1]	Identity Theft Prevention Officer
Term of office[1] and length of time served	Since 2015
Principal occupation(s) during the past five years	Identity Theft Prevention Officer of certain mutual funds associated with Legg Mason & Co. or its affiliates (since 2015); Compliance Officer of Legg Mason & Co. (since 2013); Assistant Vice President of Legg Mason & Co. (since 2011); formerly, Associate Compliance Officer of Legg Mason & Co. (2011 to 2013)

Additional Officers (cont'd)

Robert I. Frenkel

Legg Mason
100 First Stamford Place, 6th Floor, Stamford, CT 06902

Year of birth	1954
Position(s) held with Fund[1]	Secretary and Chief Legal Officer
Term of office[1] and length of time served	Since 2011
Principal occupation(s) during the past five years	Vice President and Deputy General Counsel of Legg Mason, Inc. (since 2006); Managing Director and General Counsel — U.S. Mutual Funds for Legg Mason & Co. (since 2006) and Legg Mason & Co. predecessors (since 1994); Secretary and Chief Legal Officer of certain mutual funds associated with Legg Mason & Co. or its affiliates (since 2006) and Legg Mason & Co. predecessors (prior to 2006)

Thomas C. Mandia

Legg Mason
100 First Stamford Place, 6th Floor, Stamford, CT 06902

Year of birth	1962
Position(s) held with Fund[1]	Assistant Secretary
Term of office[1] and length of time served	Since 2011
Principal occupation(s) during the past five years	Managing Director and Deputy General Counsel of Legg Mason & Co. (since 2005) and Legg Mason & Co. predecessors (prior to 2005); Secretary of LMPFA (since 2006); Assistant Secretary of certain mutual funds associated with Legg Mason & Co. or its affiliates (since 2006) and Legg Mason & Co. predecessors (prior to 2006); Secretary of LM Asset Services, LLC ("LMAS") (since 2002) and Legg Mason Fund Asset Management, Inc. ("LMFAM") (since 2013) (formerly registered investment advisers)

Christopher Berarducci*

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

Year of birth	1974
Position(s) held with Fund[1]	Treasurer and Principal Financial Officer
Term of office[1] and length of time served	Since 2019
Principal occupation(s) during the past five years	Treasurer (since 2010) and Principal Financial Officer (since 2019) of certain mutual funds associated with Legg Mason & Co. or its affiliates; Director of Legg Mason & Co. (since 2015); formerly, Vice President of Legg Mason & Co. (2011 to 2015); Assistant Controller of certain mutual funds associated with Legg Mason & Co. or its affiliates (prior to 2010)

Information about Directors and Officers

Additional Officers (cont'd)

Jeanne M. Kelly

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

Year of birth	1951
Position(s) held with Fund[1]	Senior Vice President
Term of office[1] and length of time served	Since 2011
Principal occupation(s) during the past five years	Senior Vice President of certain mutual funds associated with Legg Mason & Co. or its affiliates (since 2007); Senior Vice President of LMPFA (since 2006); President and Chief Executive Officer of LMAS and LMFAM (since 2015); Managing Director of Legg Mason & Co. (since 2005) and Legg Mason & Co. predecessors (prior to 2005); formerly, Senior Vice President of LMFAM (2013 to 2015)

† Directors who are not "interested persons" of the Fund within the meaning of Section 2(a)(19) of the Investment Company Act of 1940, as amended (the "1940 Act").

* Effective September 27, 2019, Mr. Berarducci became Treasurer and Principal Financial Officer.

1 The Fund's Board of Directors is divided into three classes: Class I, Class II and Class III. The terms of office of the Class I, II and III Directors expire at the Annual Meetings of Stockholders in the year 2021, year 2022 and year 2020, respectively, or thereafter in each case when their respective successors are duly elected and qualified. The Fund's executive officers are chosen each year, to hold office until their successors are duly elected and qualified.

2 Ms. Trust is an "interested person" of the Fund as defined in the 1940 Act because Ms. Trust is an officer of LMPFA and certain of its affiliates.

Annual chief executive officer and principal financial officer certifications (unaudited)

The Fund's Chief Executive Officer ("CEO") has submitted to the NYSE the required annual certification and the Fund also has included the Certifications of the Fund's CEO and Principal Financial Officer required by Section 302 of the Sarbanes-Oxley Act in the Fund's Form N-CSR filed with the SEC for the period of this report.

Other shareholder communications regarding accounting matters (unaudited)

The Fund's Audit Committee has established guidelines and procedures regarding the receipt, retention and treatment of complaints regarding accounting, internal accounting controls or auditing matters (collectively, "Accounting Matters"). Persons with complaints or concerns regarding Accounting Matters may submit their complaints to the Chief Compliance Officer ("CCO"). Persons who are uncomfortable submitting complaints to the CCO, including complaints involving the CCO, may submit complaints directly to the Fund's Audit Committee Chair. Complaints may be submitted on an anonymous basis.

The CCO may be contacted at:
Legg Mason & Co., LLC
Compliance Department
620 Eighth Avenue, 49th Floor
New York, New York 10018

Complaints may also be submitted by telephone at 1-800-742-5274. Complaints submitted through this number will be received by the CCO.

Dividend reinvestment plan (unaudited)

Unless you elect to receive distributions in cash (i.e., opt-out), all dividends, including any capital gain dividends and return of capital distributions, on your Common Stock will be automatically reinvested by Computershare Trust Company, N.A., 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 Computershare Trust Company, N.A., 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 (plus $0.03 per share commission) on the payment date (or, if the payment date is not a NYSE trading day, the immediately preceding trading day) is equal to or exceeds the net asset value per share of the Common Stock at the close of trading on the NYSE on the payment date, the Fund will issue new Common Stock at a price equal to the greater of (a) the net asset value per share at the close of trading on the NYSE on the payment date or (b) 95% of the market price per share of the Common Stock on the payment date.

(2) If the net asset value per share of the Common Stock exceeds the market price of the Common Stock (plus $0.03 per share commission) at the close of trading on the NYSE on the payment 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 payment date and terminating no later than the earlier of (a) 30 days after the dividend or distribution payment date, or (b) the payment 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 (plus $0.03 per share commission) rises so that it equals or exceeds the net asset value per share of the Common Stock at the close of trading on the NYSE on the payment 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) the net asset value per share at the close of trading on the NYSE on the day prior to the issuance of shares for reinvestment 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 462 South 4th Street, Suite 1600, Louisville, KY 40202 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.

Plan participants who sell their shares will be charged a service charge (currently $5.00 per transaction) and the Plan Agent is authorized to deduct brokerage charges actually incurred from the proceeds (currently $0.05 per share commission). 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.

The Fund reserves the right to amend or terminate the Plan if, in the judgment of the Board of Directors, the change is warranted. 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. Additional information about the Plan and your account may be obtained from the Plan Agent at 462 South 4th Street, Suite 1600, Louisville, KY 40202 or by calling the Plan Agent at 1-888-888-0151.

ClearBridge

Energy Midstream Opportunity Fund Inc.

Directors

Robert D. Agdern

Carol L. Colman

Daniel P. Cronin

Paolo M. Cucchi

William R. Hutchinson

Eileen A. Kamerick

Nisha Kumar

Jane Trust
Chairman

Officers

Jane Trust
President and Chief Executive Officer

Christopher Berarducci*
Treasurer and Principal Financial Officer

Todd F. Kuehl
Chief Compliance Officer

Jenna Bailey
Identity Theft Prevention Officer

Robert I. Frenkel
Secretary and Chief Legal Officer

Thomas C. Mandia
Assistant Secretary

Jeanne M. Kelly
Senior Vice President

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

Investment manager
Legg Mason Partners Fund Advisor, LLC

Subadviser
ClearBridge Investments, LLC

Custodian
The Bank of New York Mellon

Transfer agent
Computershare Inc.
462 South 4th Street, Suite 1600
Louisville, KY 40202

Independent registered public accounting firm
PricewaterhouseCoopers LLP
Baltimore, MD

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

New York Stock Exchange Symbol
EMO

* Effective September 27, 2019, Mr. Berarducci became Treasurer and Principal Financial Officer.

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;
- Bank account information, legal documents, and identity verification documentation;
- 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 to 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 statistical analysis, market research and marketing services solely for the Funds;
- Permit access to transfer, whether in the United States or countries outside of the United States to such Funds' employees, agents and affiliates and service providers as required to enable the Funds to conduct ordinary business, or to comply with obligations to government regulators;
- The Funds' representatives such as legal counsel, accountants and auditors to enable the Funds to conduct ordinary business, or to comply with obligations to government regulators;
- Fiduciaries or representatives acting on your behalf, such as an IRA custodian or trustee of a grantor trust.

Legg Mason Funds Privacy and Security Notice (cont'd)

Except as otherwise permitted by applicable law, companies acting on the Funds' behalf, including those outside the United States, 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, if you have questions about the Funds' privacy practices, or our use of your nonpublic personal information, 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 Funds at 1-888-777-0102.

Revised April 2018

ClearBridge Energy Midstream Opportunity Fund Inc.

ClearBridge Energy Midstream Opportunity 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 stock.

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 as an exhibit to its reports on Form N-PORT. Previously, the Fund filed a complete schedule of portfolio holdings with the SEC for the first and third quarters of each fiscal year on Form N-Q. The Fund's Forms N-PORT and N-Q are available on the SEC's website at www.sec.gov. To obtain information on Forms N-PORT and N-Q, shareholders can call the Fund at 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 related to portfolio transactions are available (1) without charge, upon request, by calling 1-888-777-0102, (2) at www.lmcef.com and (3) on the SEC's website at www.sec.gov.

This report is transmitted to the shareholders of ClearBridge Energy Midstream Opportunity 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.

Computershare Inc.
462 South 4th Street, Suite 1600
Louisville, KY 40202

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