Duff & Phelps Select Energy MLP Fund Inc.

ANNUAL REPORT

Not FDIC Insured
No Bank Guarantee
May Lose Value

November 30, 2016

MESSAGE TO SHAREHOLDERS

Dear Duff & Phelps Select Energy MLP Fund Inc. Shareholder:

Enclosed is the annual report for the Duff & Phelps Select Energy MLP Fund Inc. that discusses performance for the 12 months ended November 30, 2016. The report includes commentary from the portfolio management team at Duff & Phelps Investment Management on market conditions and the fund's performance during the period.

For the fiscal year ended November 30, 2016, the fund's net asset value (NAV) increased 13.58%, including $0.88 in reinvested distributions. For the same period, the average NAV of the constituents of the Lipper Energy MLP closed-end fund category increased 9.99%, including reinvested dividends.

On behalf of the investment professionals at Duff & Phelps, I welcome new investors to the fund and thank all of our shareholders for entrusting your assets to us. If you have any questions, our customer service team is available to assist you at 1-866-270-7788 or through the closed-end fund section of our website, www.virtus.com.

Sincerely,

George R. Aylward
President and Director
Duff & Phelps Select Energy MLP Fund Inc.

January 2017

This information does not represent an offer, or the solicitation of an offer, to buy or sell securities of the Fund.

Performance data quoted represents past results. Past performance is no guarantee of future results, and current performance may be higher or lower than the performance shown above.

DUFF & PHELPS SELECT ENERGY MLP FUND INC.
MANAGER'S DISCUSSION OF FUND PERFORMANCE
NOVEMBER 30, 2016
(Unaudited)

About the Fund:

The Duff & Phelps Select Energy MLP Fund Inc. (NYSE: DSE) (the "Fund" or "DSE") invests at least 80% of its Managed Assets in energy master limited partnerships ("MLPs"). The Fund's "Managed Assets" are equal to its net assets plus any borrowings made for the purpose of leverage. The Fund may invest up to 20% of its Managed Assets in securities of issuers either: (i) in the energy sector and that are not MLPs or (ii) that produce products that are primarily for the use of companies in the energy sector (such as sand miners, certain chemical companies, and coking coal processors). The Fund's investment objective is to seek a high level of total return resulting from a combination of current tax-deferred distributions and capital appreciation. *There is no guarantee that the Fund will achieve its investment objective.*

The use of leverage enables the Fund to borrow at short-term rates and invest at higher yields on its investments. As of November 30, 2016, the Fund's leverage consisted of $78 million of borrowings made pursuant to a line of credit which represented approximately 28% of the Fund's total assets.

Portfolio Review – Duff & Phelps Investment Management Co. ("DPIM")

The Duff & Phelps Select Energy MLP Fund Inc. is subadvised by Duff & Phelps Investment Management Co., and managed by a team of two dedicated MLP investment professionals with average industry experience of more than 18 years: David D. Grumhaus, Jr., Senior Portfolio Manager, and Charles Georgas, CFA, Portfolio Manager. The following commentary is provided by the portfolio management team at DPIM, and covers the period from December 1, 2015 through November 30, 2016.

How did the equity markets and MLPs perform during the Fund's fiscal year ended November 30, 2016?

After a volatile first six months, MLPs had a very quiet second half, but still managed to slightly outperform the market for the fiscal year. MLPs, as measured by the Alerian MLP Index, finished the fiscal year up 9.28% on a total return basis versus 8.06% for the S&P 500® Index. Recall that, on February 11, 2016, almost two-and-half months into the fiscal year, MLPs were down 30.7% and underperforming the S&P 500® Index by 19.1% before dramatically rallying and finishing up 5.2% for the first half. The second half was a very different story than the first half, as MLPs traded in a very tight band as the market waited to see what would happen with oil prices. The news of the OPEC production cut on the last day of the fiscal year drove a big rally in MLPs and allowed them to post a decent gain for the second half.

As noted above, oil continued to be the major driver of the MLP sector in fiscal 2016. Just as oil's fall into the mid-$20s per barrel in January and February accounted for the sector's poor early performance, oil's big rally to $49.10 a barrel by the end of May sparked the sector's resurgence. The debate around oil continued to center on global supply and demand and whether supply would fall sufficiently to start cutting into the large oil imbalances that had built up in 2015. While certain producers, particularly the U.S., began to show real discipline, OPEC once again took center stage. In late September, an OPEC agreement, in principle, to cut production rallied oil prices, but the market then spent the next two months debating whether an agreement could actually be reached at OPEC's November 30 meeting. All the while, individual OPEC countries pushed their production higher so they could get a better deal if the cuts actually happened. OPEC eventually reached an historic agreement to cut production at the meeting. While, accurately handicapping OPEC is near impossible, we were cautiously optimistic that a deal would be consumated. We believed that Saudi Arabia had changed its view, and as such, we thought it would push a deal through.

The sector appears to be in much better shape than it was at the start of 2016. MLPs have been helped by a host of external factors, including higher commodity prices, significantly stronger credit markets, improving equity markets, and a big uplift in the credit profiles of many of their exploration and production ("E&P") customers. MLPs have also worked hard to reduce the risk associated with their businesses. We saw a number of MLPs significantly improve their balance sheets through a combination of restructurings, asset sales, joint ventures, preferred equity raises, incentive distribution rights ("IDRs") givebacks, and general partner/limited partner ("GP/LP") mergers. Consolidation also finally appears to be happening. Two big Canadian midstream companies each announced major acquisitions, with TransCanada Corp. buying Columbia Pipeline Group, and Enbridge Inc. buying Spectra Energy. There was also a host of small M&A deals and rumors of countless others.

While the outlook for MLPs is much better, two obstacles continue to plague the sector. The first centers on the continued difficulty of getting pipelines approved. Since the beginning of 2015, we have seen 13 pipeline projects be cancelled or significantly delayed, the most prominent right now being the Dakota Access Pipeline (DAPL), which the Obama administration halted despite it being largely finished. The new Trump administration may get projects moving again, but a number of companies are currently seeing their growth projects get curtailed. The second obstacle involves the Energy Transfer family of companies. After a proposed deal with Williams fell apart in June, Energy Transfer announced in late November that it was merging two of its MLPs, Sunoco Logistics and Energy Transfer Partners. While the combined company will have attractive assets, the market was clearly caught off guard and responded by selling down the stocks, with both falling over 13% in the 10 trading days after the announcement. The deal was clearly a negative for the sector given the combined size of the two companies in the Alerian MLP Index (12%) and the issues the deal raises about MLP corporate governance more generally.

What affected the Fund's performance during the fiscal year?

On a stock price basis, the Fund was up 17.48% for the fiscal year ended November 30, 2016. During the year, the Fund moved from a -2.4% discount to net asset value ("NAV") to a 0.9% premium to NAV.

On a NAV basis, the Fund returned 13.58%. The combination of leverage and good stock selection benefited the Fund. The Fund closed the year with leverage of 28%.

For the fiscal year, the Fund benefited from us staying patient and not selling stocks when the sector was down significantly. In particular, many of the larger-cap holding names saw their stock prices fall precipitously early in the year, as investors looked to reduce exposure to the sector, but a number of these stocks rebounded to finish up significantly on the year. For the 12 months ended November 30, 2016, the two best contributing sub-sectors were petroleum, transportation and storage, and gathering and processing, while the worst contributing sectors were downstream/other and upstream.

Not surprisingly, many of the worst performing names for the Fund were stocks that we exited early in the year to reallocate into other stocks. Interestingly, our biggest loser was also our biggest winner. At the end of February, Targa Resources Corp. (TRGP) bought in its MLP, Targa Resources Partners

(NGLS), which we owned. Given the weak commodity prices early in the year and the timing of the deal at the bottom of the market, NGLS ended up being the worst contributor to the Fund for the year. However, the Fund held on to the TRGP stock that it got in return for NGLS and subsequently added to the position, and TRGP ended the year as the largest contributor to the Fund.

The portfolio's overall makeup did not change dramatically over the year. The Fund's biggest increased allocations were to petroleum transportation and storage and diversified. The allocations decreased to downstream/other, retail propane, and marine shipping, and the Fund also sold out of a small allocation to upstream.

What is your outlook for the sector?

We believe the outlook for MLPs going into 2017 is attractive. As a sector, MLPs are still down 35% from their August 2014 highs. Also, for the first time since then, MLP investors should be able to stop worrying about oil prices. Oil markets were already headed back into balance in 2017, and the new OPEC production cuts should push global supply/demand into meaningful deficits. While there will be the typical concerns about cheating or the agreement falling apart, the deal looks real, and we are constructive on the price of oil. Trump's election should also be a big boost for the sector. Trump's focus on infrastructure spending and cutting back regulation plays right into the MLP space, and his appointments of Scott Pruitt as head of the EPA, former Texas Governor Rick Perry as Secretary of Energy, and Exxon CEO Rex Tillerson as Secretary of State seem consistent with that focus. A potential pickup in economic growth around Trump's election and the policies he wants to implement will also help drive demand for oil, natural gas, and natural gas liquids. We are already starting to see U.S. E&P companies increase production, and concerns about the overcapacity in many U.S. basins is now being replaced by talk about when new midstream infrastructure will be needed. Having largely fixed their balance sheets and cut costs, MLPs are also now in a much better place to take advantage of these new opportunities.

In light of the foregoing, we are trying to better understand why MLPs are not performing better. Through mid-December, MLPs are slightly off for the month and still down over 3% for the fourth quarter. Some reasons for the muted performance may include rising interest rates, a rotation into higher-beta energy names, ongoing concerns about the Energy Transfer family, and year-end tax loss selling. While all of these are probably playing some role, we are simply not seeing enough new money come into the space. Retail investors continue to be wary following the long downturn, while institutions seem to be investing in other parts of the energy value chain or getting their midstream exposure through the C-Corporations. Nevertheless, as we head into next year, we think the still-attractive MLP yields combined with higher oil prices and the Trump agenda should lead to solid sector performance.

The preceding information is the opinion of portfolio management only through the end of the period of the report as stated on the cover. Any such opinions are subject to change at any time based upon market conditions and should not be relied upon as investment advice.

There can be no assurance that the Fund will achieve its investment objectives.

The Fund's portfolio holdings are subject to change and may not be representative of the portfolio managers' current or future investments. The mention of individual securities held by the Fund is for informational purposes only and should not be construed as a recommendation to purchase or sell any securities. Investors *seeking financial advice regarding the appropriateness of investing in any securities or investment strategies discussed should consult their financial professional.*

Equity Securities: The market price of equity securities may be adversely affected by financial market, industry, or issuer-specific events. Focus on a particular style or on small or medium-sized companies may enhance that risk.

MLPs: Investments in Master Limited Partnerships may be adversely impacted by tax law changes, regulation, or factors affecting underlying assets. The Fund has elected to be treated as a "C" corporation, for United States federal and state income tax purposes. Accordingly, the Fund may pay federal and applicable state corporate taxes.

Leverage: When a fund leverages its portfolio, the value of its shares may be more volatile and all other risks may be compounded.

Energy Sector Concentration: The Fund's investments are concentrated in the energy sector and may present more risks than if the Fund were broadly diversified over numerous sectors of the economy.

Market Price/NAV: Shares of closed-end funds often trade at a discount to their net asset value, which may increase investors' risk of loss. At the time of sale, an investor's shares may have a market price that is above or below the Fund's NAV.

DUFF & PHELPS SELECT ENERGY MLP FUND INC.
NOVEMBER 30, 2016
(Unaudited)

The following tables present the portfolio holdings within certain sectors or countries as a percentage of total investments as of November 30, 2016.

Asset Allocation	
Energy	97%
Utilities	2
Other (includes short-term investments)	1
Total	100%

Country Weightings	
United States (includes short-term investments)	94%
Marshall Islands	6
Total	100%

Sector Weightings	
Traditional Midstream	90%
Marine/Shipping	5
Downstream/Other	4
Short-Term Investment	1
	100%

DUFF & PHELPS SELECT ENERGY MLP FUND INC.
KEY INVESTMENT TERMS
NOVEMBER 30, 2016 (Unaudited)

Alerian MLP Index

The Alerian MLP Index is the leading gauge of large- and mid-cap energy Master Limited Partnerships (MLPs). The float-adjusted, capitalization-weighted index, which includes 50 prominent companies and captures approximately 75% of available market capitalization, is disseminated real-time on a price-return basis (AMZ) and on a total-return basis. The index is unmanaged, its returns do not reflect any fees, tax assets or liabilities, expenses, or sales charges, and it is not available for direct investment.

Lipper Energy MLP Closed-End Fund Average

The Lipper Energy MLP Closed-End Fund Average is the average performance at market of all funds within the Lipper fund classification of Energy MLP closed-end funds, which invest primarily in Master Limited Partnerships (MLPs) engaged in the transportation, storage, and processing of minerals and natural resources. Returns include the reinvestment of all distributions, including returns of capital, if any, calculated among the funds. Lipper, Inc., a wholly-owned subsidiary of Reuters, provides independent insight on global collective investments.

Master Limited Partnerships (MLPs)

Entities commonly referred to as “MLPs” are generally organized under state law as limited partnerships or limited liability companies. The securities issued by many MLPs are listed and traded on a securities exchange. An MLP typically issues general partner and limited partner interests, or managing member and member interests. The general partner or managing member manages and often controls, has an ownership stake in, and is normally eligible to receive incentive distribution payments from, the MLP. If publicly traded, MLPs must derive at least 90% of their gross income from qualifying sources as described in the Internal Revenue Code in order to be treated as partnerships for United States federal income tax purposes.

Organization of the Petroleum Exporting Countries (OPEC)

The Organization of the Petroleum Exporting Countries was originally organized in September 1960 with 5 member countries and there are currently 12 member countries. The organization’s objective is to co-ordinate and unify petroleum policies among member countries, in order to secure fair and stable prices for petroleum producers; an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on capital to those investing in the industry.

S&P 500® Index

The S&P 500® Index is a free-float market capitalization-weighted index of 500 of the largest U.S. companies. The index is calculated on a total return basis with dividends reinvested. The index is unmanaged, its returns do not reflect any fees, expenses, or sales charges, and it is not available for direct investment.

DUFF & PHELPS SELECT ENERGY MLP FUND INC.
SCHEDULE OF INVESTMENTS
NOVEMBER 30, 2016

($ reported in thousands)

	SHARES/ UNITS	VALUE
COMMON STOCKS—6.6%		
Gathering/Processing—6.6%		
Targa Resources Corp.	241,375	$ 12,863
TOTAL COMMON STOCKS (Identified Cost $5,012)		**12,863**
MASTER LIMITED PARTNERSHIPS AND RELATED COMPANIES—133.2%		
Diversified—31.3%		
Enterprise Products Partners LP	263,000	6,820
MPLX LP	503,499	16,540
NGL Energy Partners LP	215,000	3,988
ONEOK Partners LP	189,291	7,913
Williams Partners LP	688,914	25,145
		60,406
Downstream/Other—5.4%		
Cheniere Energy Partners LP	120,000	3,524
Sunoco LP	288,000	6,941
		10,465
Gathering/Processing—25.0%		
Crestwood Equity Partners LP	221,783	4,968
DCP Midstream Partners LP	321,000	11,116
Enable Midstream Partners LP	37,200	581
EnLink Midstream Partners LP	1,021,399	17,895
Rice Midstream Partners LP	239,500	5,161
Western Gas Partners LP	149,000	8,504
		48,225
Marine/Shipping—7.3%		
GasLog Partners LP	406,830	8,279
KNOT Offshore Partners LP	261,000	5,690
		13,969
Natural Gas Pipelines—16.1%		
Energy Transfer Partners LP	677,235	$ 23,785
Tallgrass Energy Partners LP	155,000	7,260
		31,045
Petroleum Transportation & Storage—46.5%		
Enbridge Energy Partners LP	915,000	22,600
Genesis Energy LP	222,000	7,757
NuStar Energy LP	400,000	19,096
Plains All American Pipeline LP	568,000	18,716
Sunoco Logistics Partners LP	355,000	8,410
Tesoro Logistics LP	163,122	7,688
VTTI Energy Partners LP	165,000	2,945
Western Refining Logistics LP	120,900	2,490
		89,702
Retail Propane—1.6%		
AmeriGas Partners LP	67,500	3,029
TOTAL MASTER LIMITED PARTNERSHIPS AND RELATED COMPANIES (Identified Cost $321,328)		**256,841**
TOTAL LONG TERM INVESTMENTS—139.8% (Identified Cost $326,340)		**269,704**
SHORT-TERM INVESTMENT—1.0%		
Money Market Mutual Fund—1.0%		
BlackRock Liquidity Funds Fed Fund Portfolio Institutional Shares (seven-day effective yield 0.311%)[3]	1,855,356	1,855
TOTAL SHORT-TERM INVESTMENT (Identified Cost $1,855)		**1,855**
TOTAL INVESTMENTS—140.8% (Identified Cost $328,195)		**271,559**[1][2]
Other assets and liabilities, net—(40.8)%		(78,699)
NET ASSETS—100.0%		**$192,860**

See Notes to Financial Statements

DUFF & PHELPS SELECT ENERGY MLP FUND INC.
SCHEDULE OF INVESTMENTS (Continued)
NOVEMBER 30, 2016

($ reported in thousands)

FOOTNOTE LEGEND:

(1) Income Tax Information: For tax information at November 30, 2016, see Note 5 Income Tax Information in the Notes to Financial Statements.

(2) All or a portion of the portfolio is segregated as collateral for borrowings.

(3) Shares of this fund are publicly offered and its prospectus and annual report are publicly available.

The following table provides a summary of inputs used to value the Fund's investments as of November 30, 2016 (see Security Valuation Note 2A in the Notes to Financial Statements):

	Total Value at November 30, 2016	Level 1 Quoted Prices
Equity Securities:		
Common Stocks	$ 12,863	$ 12,863
Master Limited Partnerships and Related Companies	256,841	256,841
Short-Term Investments	1,855	1,855
Total Investments	$271,559	$271,559

There were no Level 2 (significant observable inputs) or Level 3 (significant unobservable inputs) priced securities held and there were no transfers between Level 1 and Level 2 related to securities held at November 30, 2016.

DUFF & PHELPS SELECT ENERGY MLP FUND INC.
STATEMENT OF ASSETS AND LIABILITIES
NOVEMBER 30, 2016

(Reported in thousands except shares and per share amounts)

Assets	
Investment in securities at value (Identified cost $328,195)	$ 271,559
Receivables	
Investment securities sold	3,242
Dividends	1
Deferred tax asset, net (Note 5)	25
Prepaid directors' retainer	14
Prepaid expenses	19
Total assets	274,860
Liabilities	
Payables	
Borrowings (Note 8)	78,000
Investment securities purchased	3,424
Investment advisory fees	217
Administration and accounting fees	22
Professional fee	147
Directors' fees and expenses	11
Interest payable on borrowings	91
Transfer agent fees and expenses	4
Other accrued expenses	84
Total liabilities	82,000
Net Assets	**$ 192,860**
Net Assets Consist of:	
Common stock ($0.001 par value 100,000,000 shares authorized)	$ 26
Capital paid in on shares of beneficial interest	423,278
Accumulated undistributed net investment income (loss), net of taxes	(8,978)
Accumulated undistributed net realized gain (loss), net of taxes	(164,830)
Net unrealized appreciation (depreciation), net of taxes	(56,636)
Net Assets	**$ 192,860**
Net Asset Value Per Share	
(Net assets/shares outstanding) Shares outstanding 26,076,161	$ 7.40

See Notes to Financial Statements

DUFF & PHELPS SELECT ENERGY MLP FUND INC.
STATEMENT OF OPERATIONS
YEAR ENDED NOVEMBER 30, 2016

($ reported in thousands)

Investment Income	
Dividends and distributions	$ 23,204
Less return of capital distributions (Note 2C)	(21,618)
Total investment income	1,586
Expenses	
Investment advisory fees	2,369
Administration and accounting fees	313
Professional fees	222
Directors' fees and expenses	131
Printing fees and expenses	110
Franchise taxes	42
Transfer agent fees and expenses	19
Custodian fees	4
Miscellaneous	147
Total expenses before interest expense	3,357
Interest expense on borrowings (Note 8)	935
Total expenses after interest expense	4,292
Net investment income (loss) before income taxes	(2,706)
Net tax benefit (expense)	—
Net investment income (loss)	**(2,706)**
Net Realized and Unrealized Gain (Loss) on Investments	
Net realized gain (loss) on investments before income taxes	(107,447)
Net tax benefit (expense)	—
Net realized gain (loss) on investments	(107,447)
Net change in unrealized appreciation (depreciation) on investments before income taxes	131,059
Deferred tax benefit (expense)	—
Net change in unrealized appreciation (depreciation)	131,059
Net realized and unrealized gain (loss) on investments after income taxes	**23,612**
Net increase (decrease) in net assets resulting from operations	**$ 20,906**

See Notes to Financial Statements

DUFF & PHELPS SELECT ENERGY MLP FUND INC.
STATEMENTS OF CHANGES IN NET ASSETS

($ reported in thousands)

	Year Ended November 30, 2016	Year Ended November 30, 2015
INCREASE/(DECREASE) IN NET ASSETS		
From Operations		
Net investment income (loss)	$ (2,706)	$ (3,946)
Net realized gain (loss)	(107,447)	(72,986)
Net change in unrealized appreciation (depreciation)	131,059	(138,396)
Increase (decrease) in net assets resulting from operations	20,906	(215,328)
From Distributions to Shareholders		
Return of capital	(22,879)	(40,791)
Decrease in net assets from distributions to shareholders	(22,879)	(40,791)
From Share Transactions		
Reinvestment of distributions resulting in the issuance of common stock (103,770 and 117,155 shares, respectively)	767	1,550
Increase (decrease) in net assets from share transactions	767	1,550
Net increase (decrease) in net assets	(1,206)	(254,569)
Net Assets		
Beginning of period	194,066	448,635
End of period	**$ 192,860**	**$ 194,066**
Accumulated undistributed net investment income (loss) net of taxes at end of period	$ (8,978)	$ (6,272)

See Notes to Financial Statements

DUFF & PHELPS SELECT ENERGY MLP FUND INC.
STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED NOVEMBER 30, 2016

Increase (Decrease) in cash	
Cash Flows Provided by (Used for) Operating Activities:	
Net increase (decrease) in net assets resulting from operations	$ 20,906
Adjustments to reconcile net increase (decrease) in net assets resulting from operations to net cash provided/(used) by operating activities:	
Proceeds from sales of long-term investments	88,933
(Increase) Decrease in investment securities sold receivable	(1,847)
Purchase of long-term investments	(68,657)
Increase (Decrease) in investment securities purchased payable	3,424
Net (purchases) or sales of short-term securities	(2,176)
Net change in unrealized (appreciation)/depreciation on investments	(131,059)
Net realized (gains)/loss on investments	107,447
Return of capital distributions on investments	21,618
(Increase) Decrease in deferred tax asset, net	(25)
(Increase) Decrease in dividends receivable	118
(Increase) Decrease in prepaid expenses	13
(Increase) Decrease in prepaid directors' retainer	(5)
(Increase) Decrease in interest payable on borrowings	60
Increase (Decrease) in investment advisory fees payable	(39)
Increase (Decrease) in administration and accounting fees payable	(74)
Increase (Decrease) in directors' fees and expenses payable	(22)
Increase (Decrease) in other accrued expenses payable	(3)
Cash provided by (used) for operating activities	38,612
Cash provided by (used for) financing activities:	
Cash received from borrowings	43,500
Cash payments to reduce borrowings	(60,000)
Cash dividends paid to shareholders	(22,112)
Cash provided by (used for) financing activities:	(38,612)
Net increase (decrease) in cash	—
Cash:	
Cash at beginning of period	—
Cash at end of period	**$ —**
Supplemental cash flow information:	
Reinvestment of dividends and distributions	$ 767
Cash paid during the period for interest	875

See Notes to Financial Statements

DUFF & PHELPS SELECT ENERGY MLP FUND INC.
FINANCIAL HIGHLIGHTS
SELECTED PER SHARE DATA AND RATIOS FOR A SHARE OUTSTANDING THROUGHOUT EACH PERIOD

	For the Year Ended November 30, 2016	For the Year Ended November 30, 2015	From Inception[1] to November 30, 2014
PER SHARE OPERATING DATA:			
Net asset value, beginning of period	$ 7.47	$ 17.35	$ 19.10[1][2]
Income from investment operations:			
Net investment income/(loss)[3]	(0.10)	(0.15)	(0.09)
Net realized and unrealized gain/(loss)	0.91	(8.15)	(1.30)
Total from investment operations	0.81	(8.30)	(1.39)
Dividends and/or Distributions to Shareholders:			
Distributions from return of capital	(0.88)	(1.58)	(0.32)
Total dividends and distributions to shareholders	(0.88)	(1.58)	(0.32)
Offering costs charged to paid in capital	—	—	(0.04)
Net asset value, end of period	$ 7.40	$ 7.47	$ 17.35
Market price, end of period[4]	$ 7.47	$ 7.29	$ 15.80
Total return, net asset value[5]	13.58%	(50.79)%	(7.64)%[9]
Total return, market value[6]	17.48%	(47.24)%	(19.72)%[9]
Net assets, end of period (000's)	$192,860	$194,066	$448,635
RATIOS/SUPPLEMENTAL DATA:			
Ratio of total expenses after interest expense to average net assets[7][8]	2.52%	2.28%	2.02%[10][11]
Ratio of net investment income/(loss) to average net assets	(1.59)%	(1.20)%	(1.16)%[10][11]
Portfolio turnover rate	28%	20%	22%[9]
Bank Borrowings:			
Loan outstanding, end of period (000's)	$ 78,000	$ 94,500	$193,500
Asset coverage for loan outstanding, end of period	347%	305%	332%

(1) The Fund commenced operations on June 25, 2014, the date which its initial public offering shares were issued.

(2) Initial public offering price of $20.00 per share less sales load of $0.90.

(3) Calculated based on average shares outstanding.

(4) Closing Price – New York Stock Exchange.

(5) NAV return is calculated using the opening Net Asset Value of the Fund's common stock on the first business day and the closing Net Asset Value of the Fund's common stock on the last business day of each period reported. Dividends and distributions, if any, are assumed, for the purpose of this calculation, to be reinvested at prices obtained under the Fund's Automatic Reinvestment and Cash Purchase Plan.

(6) Total investment return is calculated assuming a purchase of common shares on the opening of the first day and sale on the closing of the last day of each period reported. Dividends and distributions are assumed, for purposes of this calculation, to be reinvested at prices obtained under the Fund's Automatic Reinvestment and Cash Purchase Plan. Total investment return is not annualized for periods of less than one year. Brokerage commissions that a shareholder may pay are not reflected. Total return does not reflect the deduction of taxes that a shareholder may pay on fund distributions or the sale of fund shares.

See Notes to Financial Statements

DUFF & PHELPS SELECT ENERGY MLP FUND INC.
FINANCIAL HIGHLIGHTS (Continued)
SELECTED PER SHARE DATA AND RATIOS FOR A SHARE OUTSTANDING THROUGHOUT EACH PERIOD

(7) Ratio of operating expenses to average net assets, before interest expense and before tax benefit (expense) was 1.97%, 1.84%, and 1.73% for the periods ended November 30, 2016, November 30, 2015, and November 30, 2014, respectively.
(8) Ratio of operating expenses to average net assets, before interest expense and after tax benefit (expense) was 1.97%, 1.84%, and 1.73% for the periods ended November 30, 2016, November 30, 2015, and November 30, 2014 respectively.
(9) Not annualized.
(10) Annualized.
(11) Ratio is calculated starting June 30, 2014, the date the Fund began accruing expenses.

See Notes to Financial Statements

DUFF & PHELPS SELECT ENERGY MLP FUND INC.
NOTES TO FINANCIAL STATEMENTS
NOVEMBER 30, 2016

Note 1. Organization

The Fund is organized as a non-diversified, closed-end management investment company registered under the Investment Company Act of 1940, as amended (the “1940 Act”). The Fund was incorporated as a Maryland corporation on March 28, 2014. The Fund’s initial public offering was on June 25, 2014, and the Fund commenced investment operations on June 30, 2014. The Fund’s investment objective is to seek a high level of total return resulting from a combination of current tax-deferred distributions and capital appreciation. *There can be no assurance that the Fund will achieve its investment objective.*

Note 2. Significant Accounting Policies

The following is a summary of significant accounting policies followed by the Fund in the preparation of its financial statements. The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of increases and decreases in net assets from operations during the reporting period. Actual results could differ from those estimates, and those differences could be significant.

A. Security Valuation

Security valuation procedures for the Fund, which include nightly price variance, as well as back-testing items such as bi-weekly unchanged price, monthly secondary source and transaction analysis, have been approved by the Board of Directors of the Fund (the “Board”, or the “Directors”). All internally fair valued securities are approved by a valuation committee (the “Valuation Committee”) approved by the Board. The Valuation Committee is comprised of certain members of management and convenes independently from portfolio management. All internally fair valued securities are updated daily and reviewed in detail by the Valuation Committee monthly unless changes occur within the period. The Valuation Committee reviews the validity of the model inputs and any changes to the model. Fair valuations are reviewed quarterly by the Board.

The Fund utilizes a fair value hierarchy which prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. The Fund’s policy is to recognize transfers between levels at the end of the reporting period.

- Level 1 – quoted prices in active markets for identical securities (security types generally include listed equities).
- Level 2 – prices determined using other significant observable inputs (including quoted prices for similar securities, interest rates, prepayment speeds, credit risk, etc.).
- Level 3 – prices determined using significant unobservable inputs (including the Valuation Committee’s own assumptions in determining the fair value of investments).

A description of the valuation techniques applied to the Fund’s major categories of assets and liabilities measured at fair value on a recurring basis is as follows:

Equity securities are valued at the official closing price (typically last sale) on the exchange on which the securities are primarily traded or, if no closing price is available, at the last bid price and are categorized as Level 1 in the hierarchy. Restricted equity securities and private placements that are not widely traded, are illiquid, or are internally fair valued by the Valuation Committee, are generally categorized as Level 3 in the hierarchy.

Certain non-U.S. securities may be fair valued in cases where closing prices are not readily available or are deemed not reflective of readily available market prices. For example, significant events (such as movement in the U.S. securities market, or other regional and local developments) may occur between the time that non-U.S. markets close (where the security is principally traded) and the time that the Fund calculates its net asset value ("NAV") (at the close of regular trading on the New York Stock Exchange ("NYSE"), generally 4 p.m. Eastern time) that may impact the value of securities traded in these non-U.S. markets. In such cases the Fund fair values non-U.S. securities using an independent pricing service which considers the correlation of the trading patterns of the non-U.S. security to the intraday trading in the U.S. markets for investments such as American Depositary Receipts, financial futures, Exchange-Traded Funds, and certain indexes, as well as prices for similar securities. Such fair valuations are categorized as Level 2 in the hierarchy. Because the frequency of significant events is not predictable, fair valuation of certain non-U.S. common stocks may occur on a frequent basis.

Debt securities, including restricted securities, are valued based on evaluated quotations received from independent pricing services or from dealers who make markets in such securities. For most bond types, the pricing service utilizes matrix pricing that considers one or more of the following factors: yield or price of bonds of comparable quality, coupon, maturity, current cash flows, type, and current day trade information, as well as dealer supplied prices. These valuations are generally categorized as Level 2 in the hierarchy. Structured debt instruments, such as mortgage-backed and asset-backed securities, may also incorporate collateral analysis and utilize cash flow models for valuation and are generally categorized as Level 2 in the hierarchy. Pricing services do not provide pricing for all securities and therefore indicative bids from dealers are utilized which are based on pricing models used by market makers in the security and are generally categorized as Level 2 in the hierarchy. Debt securities that are not widely traded, are illiquid, or are internally fair valued by the Valuation Committee, are generally categorized as Level 3 in the hierarchy.

Listed derivatives that are actively traded are valued based on quoted prices from the exchange and are categorized as Level 1 in the hierarchy. Over-the-counter derivative contracts, which include forward currency contracts and equity-linked instruments, do not require material subjectivity as pricing inputs are observed from actively quoted markets and are categorized as Level 2 in the hierarchy.

Investments in open-end mutual funds are valued at NAV. Investments in closed-end funds are valued as of the close of regular trading on the NYSE each business day. Both are categorized as Level 1 in the hierarchy.

A summary of the inputs used to value the Fund's net assets by each major security type is disclosed at the end of the Schedule of Investments for the Fund. The inputs or methodologies used for valuing securities are not necessarily an indication of the risk associated with investing in those securities.

B. Security Transactions and Investment Income

Security transactions are recorded on the trade date. Realized gains and losses from sales of securities are determined on the identified cost basis. Dividend income is recognized on the ex-dividend date or, in the case of certain foreign securities, as soon as the Fund is notified. Interest income is recorded on the accrual basis. The Fund amortizes premiums and accretes discounts using the effective interest method.

C. Investment Income and Return of Capital Estimates

The Fund invests in master limited partnerships ("MLPs") which make distributions that are primarily attributable to return of capital. The Fund records investment income and return of capital in the Statement of Operations using management's estimate of the percentage of income included in the distributions received from each MLP based on historical information from the MLPs and other industry sources. These estimates may be adjusted based on information received from the MLPs after the tax and fiscal year ends.

The return of capital portion of the MLP distributions is a reduction to investment income and a reduction in the cost basis of each investment which increases net realized gain (loss) and net change in unrealized appreciation (depreciation). If the return of capital distributions exceed its cost basis, the distributions are treated as realized gains. The actual amounts of income and return of capital are only determined by each MLP after its fiscal year-end and may differ from the estimated amounts. For the year ended November 30, 2016, the Fund estimates that 90% of the MLP distributions received will be treated as a return of capital.

D. Federal and State Income Taxes

Due to the fact that the Fund invests primarily in MLPs, it cannot qualify as a Regulated Investment Company under current tax laws. Thus, the Fund is treated as a regular corporation, or "C" corporation, for U.S. income tax purposes. Accordingly, the Fund generally is subject to U.S. federal income tax on its taxable income at statutory rates applicable to "C" corporations (currently at a maximum rate of 35%). The Fund may also be subject to a 20% alternative minimum tax to the extent that alternative minimum tax exceeds the Fund's regular income tax liability. In addition, as a "C" corporation, the Fund is subject to various state income taxes by reason of its investments in MLPs (state effective rate currently estimated at 1.88%, net of federal tax benefit). As a limited partner in the MLPs, the Fund includes its distributable share of the MLP's taxable income in computing its own taxable income.

E. Income Tax Accounting Policy

The Fund applies Accounting Standards Codification (ASC) 740 (Income Taxes) in computing the income tax provision. The Fund records deferred income taxes to reflect 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. Such temporary differences are principally: (i) taxes on unrealized gains (losses), which are attributable to the temporary difference between fair market value and tax basis, and (ii) the net tax benefit of accumulated net operating losses and capital loss carryforwards. Deferred tax assets and liabilities are measured using effective tax rates expected to apply to taxable income in the years such temporary differences are realized or otherwise settled. To the extent the Fund has a deferred tax asset, consideration is given to whether or not a valuation allowance is required. The determination of whether a valuation allowance is required is based upon whether it is more likely than not that some portion or all of the deferred tax asset will not be realized. The Fund considers all positive and negative evidence in assessing any valuation allowance including the nature, frequency and severity of current and cumulative losses, forecasts of future profitability, the duration of statutory carryforward periods and the associated risk that operating and capital loss carryforwards may expire unused. The Fund also accrues additional tax expense relating to uncertain tax positions and includes interest and penalties on such positions as a component of tax expense.

F. Distributions to Shareholders

Distributions to shareholders are declared and paid on a quarterly basis and are recorded on the ex-dividend date. The Fund uses a cash flow-based distribution approach in amounts based on the Fund’s net cash flow received from portfolio investments, i.e., cash distributions received from the Fund’s investments in MLPs less expenses.

The estimated character of the distributions paid will either be dividends (ordinary income eligible to be treated as qualified dividend income) or returns of capital. Distributions made from current or accumulated earnings and profits of the Fund will be taxable to shareholders as dividend income. Distributions that are in amounts greater than the Fund’s current and accumulated earnings and profits will represent returns of capital to the extent of a shareholder’s basis in their common shares, and such distributions will correspondingly increase the realized gain upon the sale of their common shares (or decrease the realized loss). Additionally, distributions not paid from current or accumulated earnings and profits that exceed a shareholder’s tax basis in their common shares will generally be taxed as a capital gain. This estimate is based on the Fund’s operating results during the period. The Fund is unable to make a final determination as to the tax character of distributions until after the end of the calendar year when the Fund can determine earnings and profits for federal income tax purposes.

The Fund will inform shareholders of the final tax character of its distributions on Form 1099-DIV in February 2017. For the period ended November 30, 2016, we currently estimate that 100% of the distributions will be considered returns of capital for federal income tax purposes.

G. Foreign Currency Translation

Non-U.S. investment securities and other assets and liabilities denominated in foreign currencies are translated into U.S. dollar amounts at the foreign currency exchange rate effective at the end of the reporting period. Cost of investments is translated at the currency exchange rate effective at the trade date. The gain or loss resulting from a change in currency exchange rates between the trade and settlement date of a portfolio transaction is treated as a gain or loss on foreign currency. Likewise, the gain or loss resulting from a change in currency exchange rates between the date income is accrued and the date it is paid is treated as a gain or loss on foreign currency. The Fund does not isolate that portion of the results of operations arising from changes in foreign exchange rates on investments from the fluctuations arising from changes in the market prices of securities held. Such fluctuations are included with the net realized and unrealized gain or loss on investments.

H. Expenses

Expenses incurred together by the Fund and other affiliated open- and closed-end funds are allocated in proportion to the net assets of each such fund, except where allocation of direct expense to each fund or an alternative allocation method can be more appropriately used.

In addition to the net annual operating expenses that the Fund bears directly, the shareholders of the Fund indirectly bear the Fund's pro-rata expenses of any underlying open- and closed-end funds in which the Fund invests.

Note 3. Investment Advisory Fees and Related Party Transactions

($ reported in thousands)

A. Adviser

Virtus Alternative Investment Advisers, Inc. (the "Adviser"), an indirect wholly owned subsidiary of Virtus Investment Partners, Inc. ("Virtus"), is the investment adviser of the Fund. The Adviser supervises the Fund's investment program and general operations of the Fund, including the Fund's subadviser. As compensation for its services to the Fund, the Adviser receives a monthly fee at an annual rate of 1.00% of the Fund's average daily Managed Assets. "Managed Assets" is defined as the value of the total assets of the Fund minus the sum of all accrued liabilities of the Fund (other than the aggregate amount of any outstanding borrowings or other indebtedness entered into for the purpose of leverage).

B. Subadviser

Duff & Phelps Investment Management Co. ("DPIM"), an indirect wholly owned subsidiary of Virtus, is the subadviser of the Fund. The subadviser is responsible for the day-to-day portfolio management of the Fund. For its services, DPIM receives an annual fee, payable monthly from the Adviser. No fee is paid to DPIM directly from the Fund.

C. Administrator

Virtus Fund Services, LLC ("VFS"), an indirect wholly owned subsidiary of Virtus, serves as the administrator to the Fund.

For the period ended November 30, 2016, the Fund incurred administration fees totaling $237 which are included in the Statement of Operations. A portion of those fees is paid to sub-administrators that also provide services to the Fund.

D. Directors

For the period ended November 30, 2016, the Fund incurred Directors' fees totaling $117 which are included in the Statement of Operations.

Note 4. Purchases and Sales of Securities

($ reported in thousands)

Purchases and sales of securities (excluding U.S. Government and agency securities, and short term investments) during the period ended November 30, 2016, were as follows:

Purchases	Sales
$68,657	$88,933

There were no purchases or sales of long-term U.S. Government and agency securities for the period ended November 30, 2016.

Note 5. Income Tax Information

($ reported in thousands)

The Fund's taxes include current and deferred income taxes. Current income taxes reflect the estimated income tax liability of the Fund as of the period ended November 30, 2016. Deferred income taxes reflect the net tax effect of temporary differences between the carrying amounts of assets and liabilities for financial reporting and tax purposes. The Fund's tax expense or benefit is recognized on the Statement of Operations based on the component of income or gains (losses) to which such expense or benefit relates. During the year ended November 30, 2016, the Fund reevaluated its blended state income tax rate, decreasing the rate from 2.02% to 1.88% due to anticipated state apportionment of income and gains.

The Fund's income tax provision consists of the following as of November 30, 2016:

	Current tax expense (benefit)	Deferred tax expense (benefit)	Valuation Allowance expense (benefit)	Total tax expense (benefit)
Federal tax expense (benefit)	$25	$6,876	$(6,901)	$(0)
State tax expense (benefit)	—	1,137	(1,137)	—
Total tax expense (benefit)	$25	$8,013	$(8,038)	$(0)

The reconciliation between the federal statutory income tax rate of 35% and the effective tax rate on net investment income (loss) and realized and unrealized gain (loss) is as follows:

	Amount	Rate
Application of statutory income tax rate	$ 7,317	35.00%
State income taxes, net of federal benefit	393	1.88%
Return to provision and other	328	1.57%
Effect of valuation allowance	(8,038)	(38.45)%
Total income tax expense (benefit)	$ —	0.00%

Components of the Fund's net deferred tax asset (liability) as of November 30, 2016, are as follows:

Deferred tax asset:	
Net unrealized depreciation on investments (tax basis)	$ 4,972
Capital loss carryforward (tax basis)	65,561
Net operating loss carryforward (tax basis)	15,299
AMT credit carryforward	25
Charitable contribution carryforward	17
Net deferred tax asset before valuation allowance	85,874
Less: Valuation allowance	(85,849)
Net deferred tax asset (liability)	**$ 25**

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 MLP units held, and to estimate their associated deferred tax benefit/liability. Such estimates are made in good faith. From time to time, as new information becomes available, the Fund will modify its estimates or assumptions regarding its tax benefit/liability which may have a material impact on the Fund's net asset value. Realization of the deferred tax assets and carryforwards are dependent, in part, on generating sufficient taxable income of the appropriate character prior to expiration of the loss carryforwards.

At the period ended November 30, 2016, the Fund had net operating loss carryforwards ("NOL") available for federal income tax purposes of $41,485. If not utilized, the federal NOL will expire in years 2033 through 2036. Additionally, as of November 30, 2016, the Fund had capital loss carryforwards of $177,771 which may be carried forward for 5 years. If not utilized, the capital loss will expire in years 2018 through 2021. The Fund has recorded a valuation allowance of $85,849 for the net deferred tax asset at November 30, 2016, except for the portion related to the AMT tax credit, as the Fund believes it is more likely than not that the asset will not be realized within the relevant carryforward period. The AMT tax credit carryforward does not expire.

For all open tax years and all major taxing jurisdictions, management of the Fund has concluded that there are no significant uncertain tax positions that would require recognition in the financial statements. All tax years since inception remain open and subject to examination by tax jurisdictions. Furthermore, management of the Fund is 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.

At November 30, 2016, federal tax cost and aggregate gross unrealized appreciation (depreciation) of securities held is as follows:

Federal Tax Cost	Unrealized Appreciation	Unrealized (Depreciation)	Net Unrealized Appreciation (Depreciation)
$285,068	$18,633	$(32,142)	$(13,509)

The differences between the book basis and tax basis of unrealized appreciation (depreciation) and the cost of investments is primarily attributable to MLP earnings and basis adjustments.

Note 6. Indemnifications

Under the Fund's organizational documents, its officers and Directors are indemnified against certain liabilities arising out of the performance of their duties to the Fund. Each Director has also entered into an indemnification agreement with the Fund. In addition, in the normal course of business, the Fund enters into contracts that provide a variety of indemnifications to other parties. The Fund's maximum exposure under these arrangements is unknown as this would involve future claims that may be made against the Fund and that have not occurred. However, the Fund has not had prior claims or losses pursuant to such arrangements and expects the risk of loss to be remote.

Note 7. Capital Transactions

At November 30, 2016, the Fund had one class of common stock, par value $0.001 per share, of which 100,000,000 shares are authorized and 26,076,161 shares are outstanding. Registered shareholders may elect to have all distributions paid by check mailed directly to the shareholder by Computershare as dividend paying agent. Pursuant to the Automatic Reinvestment and Cash Purchase Plan (the "Plan"), shareholders not making such election will have all such amounts automatically reinvested by Computershare, as the Plan agent, in whole or fractional shares of the Fund, as the case may be. During the periods ended November 30, 2016 and November 30, 2015, there were 103,770 and 117,155 shares issued pursuant to the Plan, respectively.

Note 8. Borrowings

($ reported in thousands)

On July 22, 2016, the Fund renewed its Credit Agreement (the "Agreement") with a commercial bank (the "Bank") that allows the Fund to borrow cash from the Bank, up to a limit of $90,000 ("Commitment Amount"). Borrowings under the Agreement are collateralized by investments of the Fund. The Agreement results in the Fund being subject to certain covenants including asset coverage and portfolio composition (among others). If the Fund fails to meet or maintain certain covenants as required under the Agreement, the Fund may be required to repay immediately, in part or in full, the loan balance outstanding under the Agreement, necessitating the sale of securities at potentially inopportune times. Interest is charged at LIBOR (London Interbank Offered Rate) plus an additional percentage rate on the amount borrowed. Commitment fees are charged on the undrawn balance, if less than 75% of the Commitment Amount is outstanding as a loan to the Fund. Total commitment fees paid and accrued for the period ended November 30, 2016 were $106 and are included in interest expense on the Statement of Operations. The Agreement has a term of 364 days and is renewable by the Fund with the Bank's consent and the approval of the Board. The Agreement can also be converted into a 179 day fixed term facility, one time at the Fund's option. From December 1, 2015 to November 30, 2016, the average daily borrowings under the Agreement and the weighted daily average interest rate were $66,585 and 1.215%, respectively. At November 30, 2016, the amount of such outstanding borrowings was as follows:

Outstanding Borrowings	Interest Rate
$78,000	1.435%

Note 9. Credit Risk and Asset Concentrations

The Fund may invest a high percentage of its assets in specific sectors of the market in the pursuit of its investment objective. Fluctuations in these sectors of concentration may have a greater impact on the Fund, positive or negative, than if the Fund did not concentrate its investments in such sectors.

The Fund's investments are concentrated in the energy sector and may present more risks than if the Fund were broadly diversified over numerous sectors of the economy. A downturn in the energy sector would have a larger impact on the Fund than on an investment company that does not concentrate in the sector. The performance of the securities in the energy sector may lag the performance of other industries or the broader market as a whole.

The Fund borrows through its line of credit for the purpose of leveraging its portfolio. While leverage presents opportunities for increasing the Fund's total return, it also has the effect of potentially increasing losses. Accordingly, any event which adversely affects the value of an investment held by the Fund would be magnified to the extent the Fund is leveraged.

Note 10. Regulatory Matters and Litigation

From time to time, the Fund's investment adviser and/or its affiliates and/or subadvisers may be involved in litigation and arbitration as well as examinations and investigations by various regulatory bodies, including the SEC, involving compliance with, among other things, securities laws, client investment guidelines, laws governing the activities of broker-dealers and other laws and regulations affecting their products and other activities. The outcomes of such matters are not likely, either individually or in the aggregate, to be material to these financial statements.

Note 11. New Accounting Pronouncement

On October 13, 2016, the SEC amended existing rules intended to modernize reporting and disclosure of information. Certain of these amendments relate to Regulation S-X which sets forth the requisite form and content of financial statements. At this time, management is evaluating the implications of adopting these amendments and their impact on the financial statements and accompanying notes.

Note 12. Subsequent Events

Management has evaluated the impact of all subsequent events on the Fund through the date the financial statements were issued, and has determined that there are no subsequent events requiring recognition or disclosure in these financial statements.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of
Duff & Phelps Select Energy MLP Fund Inc.:

In our opinion, the accompanying statement of assets and liabilities, including the schedule of investments, and the related statements of operations, of changes in net assets, and of cash flows and the financial highlights present fairly, in all material respects, the financial position of Duff & Phelps Select Energy MLP Fund Inc. (the "Fund") as of November 30, 2016, 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 then ended and the financial highlights for the periods indicated, in conformity with accounting principles generally accepted in the United States of America. These financial statements and financial highlights (hereafter referred to as "financial statements") are the responsibility of the Fund's management. Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these financial statements in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits, which included confirmation of securities as of November 30, 2016 by correspondence with the custodian and brokers, provide a reasonable basis for our opinion.

PricewaterhouseCoopers LLP

Philadelphia, Pennsylvania
January 23, 2017

CERTIFICATION

The Fund's Chief Executive Officer ("CEO") will file the required annual CEO certification regarding compliance with the NYSE's listing standards no more than 30 days after the Fund's annual shareholder meeting. 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.

KEY INFORMATION

Duff & Phelps Select Energy MLP Fund Inc. Shareholder Relations: 1-866-270-7788

For general information and literature, as well as updates on net asset value, share price, major industry groups and other key information.

REINVESTMENT PLAN

The Reinvestment Plan (the "Plan") offers shareholders a convenient way to acquire additional shares of the Fund. Registered holders will be automatically placed in the Plan. If shares are held at a brokerage firm, contact your broker about participation in the Plan.

REPURCHASE OF SECURITIES

Notice is hereby given in accordance with Section 23(c) of the 1940 Act that the Fund may from time to time purchase its shares of common stock in the open market when Fund shares are trading at a discount from their net asset value.

PROXY VOTING INFORMATION (FORM N-PX)

The Adviser and subadvisers vote proxies relating to portfolio securities in accordance with procedures that have been approved by the Fund's Board. You may obtain a description of these procedures, along with information regarding how the Fund voted proxies during the most recent 12-month period ended June 30, free of charge, by calling toll-free 1-866-270-7788. This information is also available through the SEC's website at *http://www.sec.gov*.

FORM N-Q INFORMATION

The Fund files a complete schedule of portfolio holdings with the SEC for the first and third quarters of each fiscal year on Form N-Q. Form N-Q is available on the SEC's website at *http://www.sec.gov.* Form N-Q may be reviewed and copied at the SEC's Public Reference Room. Information on the operation of the SEC's Public Reference Room can be obtained by calling toll-free 1-800-SEC-0330.

DIVIDEND REINVESTMENT PLAN

It is the policy of Duff & Phelps Select Energy MLP Fund Inc. (the "Fund") to automatically reinvest distributions payable to holders ("Common Stockholders") of the Fund's shares of common stock, $0.001 par value ("Common Stock"). A "registered" Common Stockholder automatically becomes a participant in the Fund's Automatic Reinvestment and Cash Purchase Plan (the "Plan"). The Plan authorizes the Fund to credit all shares of Common Stock to participants upon a distribution regardless of whether the shares are trading at a discount or premium to the net asset value. Registered Common Stockholders may terminate their participation and receive distributions in cash by contacting Computershare Trust Company, N.A. (the "Plan Administrator"). The termination will become effective with the next distribution if the Plan Administrator is notified at least 7 business days prior to the distribution payment date. Registered Common Stockholders that wish to change their distribution option from cash payment to reinvest may do so by contacting the Plan Administrator at 1-866-270-7788. In the case of banks, brokers, or other nominees which hold your shares for you as the beneficial owner, the Plan Administrator will administer the Plan based on the information provided by the bank, broker or nominee. To the extent that you wish to participate in the Plan, you should contact the broker, bank or nominee holding your shares to ensure that your account is properly represented. If necessary, you may have your shares taken out of the name of the broker, bank or nominee and register them in your own name. When a distribution is declared, nonparticipants in the Plan will receive cash. Participants in the Plan will receive shares of the Fund valued as described below.

If on the payable date of the distribution, the market price of the Fund's Common Stock is less than the net asset value, the Plan Administrator will buy Fund shares on behalf of the participant in the open market, on the NYSE or elsewhere. The price per share will be equal to the weighted average price of all shares purchased, including commissions. Commission rates are currently $0.02 per share, although the rate is subject to change and may vary. If, following the commencement of purchases and before the Plan Administrator has completed its purchases, the trading price equals or exceeds the most recent net asset value of the Common Stock, the Plan Administrator may cease purchasing shares on the open market and the Fund may issue the remaining shares at a price equal to the greater of (a) the net asset value on the last day the Plan Administrator purchased shares or (b) 95% of the market price on such day. In the case where the Plan Administrator has terminated open market purchase and the Fund has issued the remaining shares, the number of shares received by the participant in respect of the cash distribution will be based on the weighted average of prices paid for shares purchased in the open market and the price at which the Fund issued the remaining shares. Under certain circumstances, the rules and regulations of the SEC may require limitation or temporary suspension of market purchases of shares under the Plan. The Plan Administrator will not be accountable for its inability to make a purchase during such a period.

If on the payable date of the distribution, the market price is equal to or exceeds the net asset value, participants will be issued new shares by the Fund at the greater of the (a) the net asset value on the payable date or (b) 95% of the market price on such date.

The automatic reinvestment of distributions will not relieve participants of any income tax which may be payable on such distributions. If you participate in the Plan, you will receive a Form 1099-DIV concerning the federal income tax status of distributions paid to you during the year.

As a participant in the Plan you will not pay any charge to have your distributions reinvested in additional shares. The Plan Administrator's fees for handling the reinvestment of distributions will be paid by the Fund. There will be no brokerage commissions for shares issued directly by the Fund in payment of distributions. However, each participant will pay a pro rata share of brokerage commissions incurred (currently $0.02 per share, but may vary and is subject to change) with respect to the Plan Administrator's open market purchases in connection with the reinvestment of distributions.

Participants in the Plan have the option of making additional cash payments for investment in shares of the Fund. Such payments can be made in any amount from $100 per payment to $3,000 per month. The Plan Administrator will use the funds received to purchase Fund shares in the open market on the 15th of each month or the next business day if the 15th falls on a weekend or holiday (the "Investment Date"). The purchase price per share will be equal to the weighted average price of all shares purchased on the Investment Date, including commissions. There is no charge to Common Stockholders for such cash purchases. The Plan Administrator's fee will be paid by the Fund. However, each participating Common Stockholder will pay pro rata share of brokerage commissions incurred (currently $0.02 per share, but may vary and is subject to change) with respect to the Plan Administrator's open market purchases in connection with all cash investments. Voluntary cash payments should be sent to Computershare Trust Company, N.A., P.O. Box 43078, Providence, RI 02940-3078.

Participants have an unconditional right to obtain the return of any cash payment if the Plan Administrator receives written notice at least 5 business days before such payment is to be invested.

Participants in the Plan may purchase additional shares by means of an Automatic Monthly Investment of not less than $100 nor more than $3,000 per month by electronic funds transfer from a predesignated U.S. bank account. If a participant has already established a Plan account and wishes to initiate Automatic Monthly Investments, the participant must complete and sign an automatic monthly investment form and return it to the Plan Administrator together with a voided check or deposit slip for the account from which funds are to be withdrawn. Automatic monthly investment forms may be obtained from the Plan Administrator by calling 1-866-270-7788.

Common Stockholders wishing to liquidate shares held with the Plan Administrator must do so in writing or by calling 1-866-270-7788. The Plan Administrator does not charge a fee for liquidating your shares; however, a brokerage commission of $0.02 will be charged. This charge may vary and is subject to change.

Once terminated, you may re-enroll in the Plan (provided you still have shares registered in your name) by contacting the Plan Administrator at 1-866-270-7788.

For more information regarding the Plan, please contact the Plan Administrator at 1-866-270-7788 or visit our website at Virtus.com.

The Fund reserves the right to amend or terminate the Plan as applied to any voluntary cash payments made and any dividend or distribution paid subsequent to written notice of the change sent to the members of the Plan at least 90 days before the record date for such distribution. The Plan also may be amended or terminated by the Plan Administrator with at least 90 days written notice to participants in the Plan.

FUND MANAGEMENT TABLES

Information pertaining to the Directors and Officers of the Company as of December 31, 2016, is set forth below.

The address of each individual, unless otherwise noted, is c/o Duff & Phelps Select Energy MLP Fund Inc., 100 Pearl Street, Hartford, CT 06103.

Disinterested Directors

Name Year of Birth Year Elected # of Portfolios in Fund Complex Overseen by Director	**Principal Occupation(s) During Past 5 Years and Other Directorships Held by Director**
Philip R. McLoughlin YOB: 1946 Elected: 2014 Chairman 74 Portfolios	Retired. Director and Chairman (since 2016), The Zweig Fund, Inc. and Virtus Global Dividend & Income Fund Inc.; Trustee and Chairman (since 2013), Virtus Alternative Solutions Trust (4 portfolios); Trustee/Director and Chairman (since 2011), Virtus Closed-End Funds (3 funds); Chairman and Trustee (since 2003), Virtus Variable Insurance Trust (9 portfolios); Director (since 1995), closed-end funds managed by Duff & Phelps Investment Management Co. (4 funds); Director (since 1991) and Chairman (since 2010), Lazard World Trust Fund (closed-end investment firm in Luxembourg); and Trustee (since 1989) and Chairman (since 2002), Virtus Mutual Fund Complex (52 portfolios).
William R. Moyer YOB: 1944 Elected: 2014 4 Portfolios	Financial and Operations Principal (2006 to present), Newcastle Distributors LLC (broker dealer); Partner (2006 to 2012), CrossPond Partners, LLC (strategy consulting firm); Director and Treasurer, CT Invention Convention (1986 to present); and former Chief Financial Officer, Phoenix Investment Partners. Director (since 2016), Virtus Global Dividend & Income Fund Inc.; Advisory Board Member (since 2016), The Zweig Fund, Inc.; Trustee (2013 to 2016), Virtus Alternative Solutions Trust; Trustee/Director (since 2011), Virtus Closed-End Funds (3 Funds).
James M. Oates YOB: 1946 Elected: 2014 70 Portfolios	Managing Director (since 1994), Wydown Group (consulting firm). Director (since 2016), The Zweig Fund, Inc. and Virtus Global Dividend & Income Fund Inc.; Trustee (since 2016) Virtus Variable Insurance Trust (9 portfolios); Trustee/ Director (since 2013), Virtus Closed-End Funds (3 funds); Trustee (since 2013), Virtus Alternative Solutions Trust (4 portfolios); Chairman and Trustee (since 2005), John Hancock Fund Complex (228 portfolios); Director (2002 to 2014), New Hampshire Trust Company; Chairman (since 2000), Emerson Investment Management, Inc.; Non-Executive Chairman (2000 to 2014), Hudson Castle Group, Inc. (formerly IBEX Capital Markets, Inc.) (financial services); Chairman and Director (1999 to 2014), Connecticut River Bank; Director (since 1996), Stifel Financial; and Trustee (since 1987), Virtus Mutual Fund Complex (52 portfolios).
James B. Rogers, Jr. YOB: 1942 Elected: 2016 5 Portfolios	Director (since 1986), The Zweig Fund, Inc. and Virtus Global Dividend & Income Fund Inc.; Trustee/Director (since 2016), Virtus Closed-End Funds (3 funds); Non-Executive Director, Crusader Resources Limited (since 2016); Director, First China Financial Network Holdings Limited (since 2014); Director, Phos Agro (since 2014); Director, Spanish Mountain Gold Limited (since 2014); Director, Genagro Services, Ltd. (since 2011); Director, FAB Universal Corp. (2013-2014); Chairman, Beeland Interests (Media and Investments) (since 1980).
R. Keith Walton YOB: 1964 Elected: 2016 5 Portfolios	Trustee/Director (since 2016), Virtus Closed-End Funds (3 funds); Director (since 2004), The Zweig Fund, Inc. and Virtus Global Dividend & Income Fund Inc. (since 2013); Director, Blue Crest Capital Management Funds (since 2006).
Brian T. Zino YOB: 1952 Elected: 2016 4 Portfolios	Retired President, J&W Seligman Co. Inc. (1994-2008); Trustee (since 2016), Virtus Global Multi-Sector Income Fund; Director (since 2016), Duff & Phelps Select Energy MLP Fund Inc.; Advisory Board Member (since 2016), Virtus Total Return Fund; Director (since 2014), The Zweig Fund, Inc. and Virtus Global Dividend & Income Fund Inc.; Trustee, Bentley University (since 2011); Director, J&W Seligman Co. Inc. (1986-2008); Director, ICI Mutual Ins Co (1998-2009); Member, Board of Governors of Investment Company Institute (1998-2008).

FUND MANAGEMENT TABLES (Continued)

Interested Director

The individual listed below is an “interested person” of the Trust, as defined in Section 2(a)(19) of the 1940 Act, as amended, and the rules and regulations thereunder.

Name Year of Birth Year Elected # of Portfolios in Fund Complex Overseen by Director	Principal Occupation(s) During Past 5 Years and Other Directorships Held by Director
George R. Aylward* Trustee and President YOB: 1964 Elected: 2012 70 Portfolios	Director, President and Chief Executive Officer (since 2008), Virtus Investment Partners, Inc. and/or certain of its subsidiaries; various senior officer positions with Virtus affiliates (since 2005). Chairman and Trustee (since 2015), Virtus ETF Trust II (1 fund); Trustee and President (since 2013), Virtus Alternative Solutions Trust (4 portfolios); Director (since 2013), Virtus Global Funds, PLC (2 portfolios); Trustee (since 2012) and President (since 2010), Virtus Variable Insurance Trust (9 portfolios); Trustee and President (since 2011), Virtus Closed-End Funds (3 funds); Trustee (since 2006), Virtus Mutual Funds (52 portfolios); and Director, President and Chief Executive Officer (since 2006), The Zweig Fund, Inc. and Virtus Global Dividend & Income Fund Inc.

* Mr. Aylward is an “interested person,” as defined in the 1940 Act, by reason of his position as President and Chief Executive Officer of Virtus Investment Partners, Inc. (“Virtus”), the ultimate parent company of the Adviser, and various positions with its affiliates, including the Adviser.

Advisory Board Member

Name Year of Birth Year Elected # of Portfolios in Fund Complex Overseen by Trustee	Principal Occupation(s) During Past 5 Years and Other Directorships Held by Trustee
William H. Wright II YOB: 1960 Advisory Member Appointed: 2016	Director (since 1999) and Chairman (since 2010), Josiah Macy Foundation; Director of Mount Sinai Health Systems (since 1999); Retired Managing Director of Morgan Stanley (1982-2010); Member of Yale University Council (2001-2012); Chairman of the Board of Yale Alumni Fund (2004-2006).

Officers of the Fund Who Are Not Directors

Name, Address and Year of Birth	Position(s) Held with Trust and Length of Time Served	Principal Occupation(s) During Past 5 Years
Francis G. Waltman YOB: 1962	Executive Vice President (since 2014).	Executive Vice President, Product Development (since 2009), Virtus Investment Partners, Inc. and/or certain of its subsidiaries; various senior officer positions (since 2006) with Virtus affiliates; Executive Vice President (since 2013), Senior Vice President (2008 to 2013), Virtus Mutual Fund Complex; Executive Vice President (since 2013), Senior Vice President (2010 to 2013), Virtus Variable Insurance Trust; Executive Vice President (since 2013), Senior Vice President (2011 to 2013), Virtus Closed-End Funds; Director (since 2013), Virtus Global Funds PLC; and Executive Vice President (since 2013), Virtus Alternative Solutions Trust.
Nancy J. Engberg YOB: 1956	Vice President and Chief Compliance Officer since 2014.	Vice President (since 2008) and Chief Compliance Officer (2008 to 2011 and since 2016), Virtus Investment Partners, Inc. and/or certain of its subsidiaries; various officer positions (since 2003) with Virtus affiliates; Vice President and Chief Compliance Officer (since 2011), Virtus Mutual Fund Complex; Vice President (since 2010) and Chief Compliance Officer (since 2011), Virtus Variable Insurance Trust; Vice President and Chief Compliance Officer (since 2011), Virtus Closed-End Funds; Vice President and Chief Compliance Officer (since 2012), The Zweig Fund, Inc. and Virtus Global Dividend & Income Fund Inc.; Vice President and Chief Compliance Officer (since 2013), Virtus Alternative Solutions Trust; Chief Compliance Officer (since 2015), ETFis Series Trust I; and Chief Compliance Officer (since 2015), Virtus ETF Trust II.

Name, Address and Year of Birth	Position(s) Held with Trust and Length of Time Served	Principal Occupation(s) During Past 5 Years
W. Patrick Bradley YOB: 1972	Executive Vice President (since 2016); Senior Vice President (2014 to 2016), Chief Financial Officer and Treasurer since 2014.	Executive Vice President, Fund Services (since 2016), Senior Vice President, Fund Services (2010 to 2016), Virtus Investment Partners, Inc. and/or certain of its subsidiaries; various officer positions (since 2006) with Virtus affiliates; Executive Vice President (since 2016), Senior Vice President (2013 to 2016), Vice President (2011 to 2013), Chief Financial Officer and Treasurer (since 2004), Virtus Variable Insurance Trust; Executive Vice President (since 2016), Senior Vice President (2013 to 2016), Vice President (2011 to 2013), Chief Financial Officer and Treasurer (since 2006), Virtus Mutual Fund Complex; Executive Vice President (since 2016), Senior Vice President (2013 to 2016), Vice President (2012 to 2013) and Treasurer (Chief Financial Officer) (since 2007), The Zweig Fund, Inc. and Virtus Global Dividend & Income Fund Inc.; Executive Vice President (since 2016), Senior Vice President (2013 to 2016), Vice President (2011 to 2013), Chief Financial Officer and Treasurer (since 2011), Virtus Closed-End Funds; Vice President and Assistant Treasurer (since 2011), Duff & Phelps Global Utility Income Fund Inc.; Director (since 2013), Virtus Global Funds, PLC; and Executive Vice President (since 2016), Senior Vice President, Chief Financial Officer and Treasurer (2013 to 2016), Virtus Alternative Solutions Trust.
William Renahan YOB: 1969	Vice President, Chief Legal Officer, Counsel and Secretary since 2014.	Vice President, Chief Legal Officer, and Secretary of various Virtus-affiliated closed-end funds (since 2012); Vice President and Secretary of Duff & Phelps Global Utility Income Fund Inc. (since 2012), DNP Select Income Funds Inc., Duff & Phelps Utility and Corporate Bond Trust, Inc., and DTF Tax-Free Income Funds Inc. (since 2015); Secretary (since 2014) and General Counsel (since 2015) of Duff & Phelps Investment Management Co.; and Managing Director, Legg Mason, Inc. and predecessor firms (1999-2012).

Report on Special Meeting of Shareholders

A Special Meeting of Shareholders of Duff & Phelps Select Energy MLP Fund Inc. was held on September 16, 2016. The meeting was held for purposes of electing one (1) nominee to the Board of Directors.

The results were as follows:

Election of Director	Votes For	Votes Withheld
Brian T. Zino	22,549,636	573,311

Based on the foregoing, Brian T. Zino was elected as Director. The Fund's other Directors who continue in office are George R, Aylward, Philip R. McLoughlin, William R. Moyer, James M. Oates, James B. Rodgers, Jr. and R. Keith Walton.

AMENDED AND RESTATED BYLAWS

Effective April 7, 2016, the Fund's Board amended and restated in its entirety the Bylaws of the Fund (the "Amended and Restated Bylaws"). The Amended and Restated Bylaws include, among other revisions, a revised advanced notice provision for shareholder nominees for Trustees and proposals for other business that provides for a window of 150 to 120 days prior to the anniversary of the prior year's proxy statement date. The foregoing description of any revisions made in the Amended and Restated Bylaws is qualified in its entirety by the full text of the Amended and Restated Bylaws effective as of April 7, 2016, which are available by writing to the Secretary of the Fund at 101 Munson Street, Greenfield, MA 01301-9668.

DUFF & PHELPS SELECT ENERGY MLP FUND INC.
101 Munson Street
Greenfield, MA 01301-9668

Board of Directors
Philip R. McLoughlin, Chairman
George R. Aylward
William R. Moyer
James M. Oates
James B. Rogers, Jr.
R. Keith Walton
Brian T. Zino
William H. Wright II, Advisory Member

Officers
George R. Aylward, President
Francis G. Waltman, Executive Vice President
W. Patrick Bradley, Executive Vice President, Chief Financial Officer and Treasurer
Nancy J. Engberg, Vice President and Chief Compliance Officer
William Renahan, Vice President, Chief Legal Officer and Secretary

Investment Adviser
Virtus Alternative Investment Advisers, Inc.
100 Pearl Street
Hartford, CT 06103-4506

Administrator
Virtus Fund Services, LLC
100 Pearl Street
Hartford, CT 06103-4506

Custodian
Bank of New York Mellon
1 Wall Street
New York, NY 10286

Independent Registered Public Accounting Firm
PricewaterhouseCoopers LLP
2 Commerce Square Suite 1700
2001 Market Street
Philadelphia, PA 19103-7042

Transfer Agent
Computershare Trust Company NA
P.O. Box 43078
Providence, RI 02940-3078

How to Contact Us
Shareholder Services 1-866-270-7788
Website **www.Virtus.com**

Important Notice to Shareholders
The Securities and Exchange Commission has modified mailing regulations for semiannual and annual shareholder fund reports to allow mutual fund companies to send a single copy of these reports to shareholders who share the same mailing address. If you would like additional copies, please call Mutual Fund Services at 1-866-270-7788.

For more information about
Virtus Closed-End Funds, please
contact us at **1-866-270-7788**
or **closedendfunds@virtus.com**
or visit **Virtus.com.**

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Duff & Phelps
Select Energy MLP Fund Inc.

c/o Computershare Investor Services
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Providence, RI 02940