

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

Form N-CSR

January 29, 2018

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM N-CSR
CERTIFIED SHAREHOLDER REPORT OF REGISTERED
MANAGEMENT INVESTMENT COMPANIES
INVESTMENT COMPANY ACT FILE NUMBER 811-22467
KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

(Exact name of registrant as specified in charter)

811 Main Street, 14th Floor, Houston, Texas
(Address of principal executive offices)

77002
(Zip code)

David Shladovsky, Esq.

KA Fund Advisors, LLC, 811 Main Street, 14th Floor, Houston, Texas 77002

(Name and address of agent for service)

Registrant's telephone number, including area code: (713) 493-2020

Date of fiscal year end: November 30, 2017

Date of reporting period: November 30, 2017

Form N-CSR is to be used by management investment companies to file reports with the Commission not later than 10 days after the transmission to stockholders of any report that is required to be transmitted to stockholders under Rule 30e-1 under the Investment Company Act of 1940 (17 CFR 270.30e-1). The Commission may use the information provided on Form N-CSR in its regulatory, disclosure review, inspection, and policymaking roles.

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A registrant is required to disclose the information specified by Form N-CSR, and the Commission will make this information public. A registrant is not required to respond to the collection of information contained in Form N-CSR unless the Form displays a currently valid Office of Management and Budget (OMB) control number. Please direct comments concerning the accuracy of the information collection burden estimate and any suggestions for reducing the burden to Secretary, Securities and Exchange Commission, 450 Fifth Street, NW, Washington, DC 20549-0609. The OMB has reviewed this collection of information under the clearance requirements of 44 U.S.C. § 3507.

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Item 1. Reports to Stockholders.

The report of Kayne Anderson Midstream/Energy Fund, Inc. (the Registrant) to stockholders for the fiscal year ended November 30, 2017 is attached below.

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Midstream/Energy Fund

KMF Annual Report

November 30, 2017

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS: This report of Kayne Anderson Midstream/Energy Fund, Inc. (the Fund) contains forward-looking statements as defined under the U.S. federal securities laws. Generally, the words believe, expect, intend, estimate, anticipate, project, will and similar expressions identify forward-looking statements, which generally are not historical in nature. Forward-looking statements are subject to certain risks and uncertainties that could cause actual results to materially differ from the Fund's historical experience and its present expectations or projections indicated in any forward-looking statement. These risks include, but are not limited to, changes in economic and political conditions; regulatory and legal changes; MLP industry risk; leverage risk; valuation risk; interest rate risk; tax risk; and other risks discussed in the Fund's filings with the Securities and Exchange Commission (SEC). You should not place undue reliance on forward-looking statements, which speak only as of the date they are made. The Fund undertakes no obligation to publicly update or revise any forward-looking statements made herein. There is no assurance that the Fund's investment objectives will be attained.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

LETTER TO STOCKHOLDERS

January 24, 2018

Dear Fellow Stockholders:

It would be easy to start this letter by saying what a difficult year it was for the MLP/Midstream space, but we believe the full story is far more positive. While stock price performance fell well short of expectations, the fundamentals that drive operating performance improved meaningfully during the year. The operating environment for companies in the midstream sector is much better today than the prior few years, and the MLP sector is on much stronger footing. This backdrop makes us very optimistic about the outlook for the next few years – we believe MLPs/Midstream Companies are poised to generate very attractive returns.

Taking this a step further, we are optimistic about the Fund's outlook as well. We believe that the Fund's portfolio is well positioned to benefit from a recovery in Midstream/MLP valuations – 71% of the Fund's investments were in MLPs and Midstream Companies as of November 30, 2017 – as well as benefit from a recovery in the valuations in other energy-related sectors. In addition to its large allocation to midstream, the Fund's two other primary sector allocations as of fiscal year end were Marine Transportation (16%) and Energy Debt (9%).

We recognize that the last three years have been very tough for energy investors. Equity prices are well below their summer 2014 peak, have been more volatile than expected and have meaningfully underperformed the broader markets. We believe the downturn has damaged investors' perception of the energy industry, and companies will have to work hard to regain investor trust. For example, in the midstream sector, quite a few MLPs reduced their distributions either directly or indirectly (through simplification transactions) during this downturn. While this should not be a total surprise given the magnitude and duration of the commodity price downturn, this was not how the MLP structure was supposed to work. There are numerous company-specific reasons, but most of the cuts can be linked to (i) more commodity price volatility (both direct and indirect) in operating results than advertised, (ii) inadequate distribution coverage ratios, (iii) commitments to spend capital to build new midstream assets that were predicated on continued volume growth and (iv) too much financial leverage. Finally, and perhaps most importantly, the downturn pointed out some weaknesses in the MLP structure – instances where limited partners and the general partner were not aligned and the structure did not provide adequate protections for the limited partners. Not only were these transactions unfavorable for these partnerships' unitholders, they were bad for the MLP sector as a whole.

We mention these facts in an effort to address some of the sector's challenges. Much like the energy industry as a whole, the MLP sector has had to evolve in an effort to respond to the downturn. That evolution process has started, but more progress must be made. We believe that more changes are needed to regain investor trust. We think that most management teams in the MLP sector will be receptive to such changes, and we plan to be an active participant in helping guide the process.

Industry Outlook

Energy-related commodity prices (most notably crude oil) have recovered very nicely from the multi-year lows set in early 2016. Crude oil prices are above \$60 per barrel and at their highest levels since late 2014. Activity levels for the energy industry have steadily increased over the last two years as the sector has become very good at doing more with less. Perhaps one of the most astounding statistics in light of the multi-year downturn is that the United States is projected to produce record volumes of crude oil, natural gas and natural gas liquids (NGLs) during 2018. Production levels for all three commodities in 2018 will be meaningfully higher than what the U.S. produced in 2014 even though commodity prices are expected to be substantially lower this year than in 2014. This is an impressive accomplishment that should lead to improved operating results for MLPs/Midstream Companies and bode well for future stock price performance.

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Currently, the U.S. is producing approximately 9.8 million barrels of crude oil and is the third largest producer of crude oil in the world trailing only Saudi Arabia and Russia. The current production levels are nearly 1 million barrels per day higher than last year. The EIA is projecting that the U.S. will exit 2018 around 10.5 million barrels per day (up 8% year-over-year) and exit 2019 around 11.0 million barrels per day (up another 5%), and many industry experts expect the U.S. to overtake both Russia and Saudi Arabia at some point in the next 12 to 18 months as the largest producer of oil in the world.

For natural gas and NGLs, which are more important than crude oil for MLPs/Midstream Companies, there was never a meaningful volume decline. Natural gas production remained essentially flat during the downturn, declining a mere 1% during 2016, and the U.S. is now producing record levels. Furthermore, the EIA expects natural gas production to grow 6% this year and 4% next year. For NGLs, production has been up every year since 2005 and is expected to grow 13% this year and 6% in 2019.

Record levels of production mean there are a lot of growth opportunities for MLPs/Midstream Companies. The expected production growth in basins like the Permian in west Texas, the Denver-Julesberg in Colorado and the Bakken in North Dakota will also create the need for new projects to transport crude, natural gas and NGLs to market, and we have seen many large-scale pipeline projects announced over the last 12 months. It is also important to note that many large pipeline projects that were started prior to the downturn have been going into service, which means that the MLPs and Midstream Companies that own these pipelines (and have already spent the capital to build these assets) should enjoy the financial benefit as the assets are placed in service and volumes increase. Finally, companies in the midstream industry should be one of the primary beneficiaries of the opportunity to export commodities, as they own the pipelines, terminals and docks that make it possible. The U.S. is currently exporting over a million barrels per day of crude oil, over three million barrels per day of refined products, over a million barrels per day of NGLs and over 2 billion cubic feet per day of liquefied natural gas, or LNG, and these figures continue to grow.

The export story will also benefit our investments in the Marine Transportation sector. These companies own and operate the LNG carriers and crude and refined product tankers that transport the commodities that the U.S. is exporting. The majority of our Marine Transportation portfolio is focused on companies that own LNG carriers (and related logistics assets), as these companies' cash flows tend to be supported by multi-year contracts and they will be beneficiaries of the expected global demand growth in LNG.

The improvements in energy fundamentals have also been good for our Energy Debt holdings, which are principally focused on Upstream Companies. Energy Debt was the best performing subsector in our portfolio during fiscal 2017, generating a positive total return of 8%. Nonetheless, we have seen the spread to Treasuries for Upstream debt tighten meaningfully, and absolute yields are relatively low. Accordingly, we will be very selective in adding to our fixed income holdings and will consider rotating out of some of these investments over the next year to the extent we believe the Fund's equity investments offer more compelling risk-adjusted returns.

MLP Structure and Industry Trends

The MLP sector is in a state of transition. The downturn has caused many MLPs and investors to reassess the business model utilized by these companies. Historically, the MLP business model has been to pay out all free cash flow (in the form of distributions to unit holders) and finance growth capital expenditures with capital from external sources. We generally believe that this model can continue to work and that calls for MLPs to be self-financing are both unrealistic and not in the best interest of investors. MLPs with long lead time growth projects need to have less leverage and more distribution coverage to absorb periods of volatility in the capital markets without putting the balance sheet or distribution at risk. We think it is clear, in retrospect, that many of these projects were not able to achieve their advertised return targets (~8x multiples), and that MLPs need to exercise greater financial discipline when undertaking new projects. Finally, we think it is also clear that, while

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incentive distribution rights (IDRs) can serve as a valuable tool to incentivize the general partner to grow the distribution in the early years of an MLP, they can become a burden over time that must be reduced or eliminated.

Equally important as the items mentioned above is a fundamental need for improved corporate governance. The sector needs to look in the mirror and recognize that the current governance structure for many MLPs is unacceptable for a public company and has to be meaningfully improved. Long gone are the days of MLPs being small cap stocks owned exclusively by retail investors. We have been vocal expressing our opinions to MLP management teams over the last few years on this topic in particular as it pertains to related-party transactions. We are paying very close attention to the terms of those deals and will be quick to point out instances where insiders appear to benefit to the detriment of outside investors. We strongly believe that MLPs would be well served to have more independent directors and to have such directors elected by the limited partners on an annual basis.

In addition to the changes happening in the MLP sector, there have been some noteworthy changes in the broader midstream industry. For many years, the MLP format was the obvious structure of choice to hold midstream assets. While a meaningful portion of assets in the midstream industry are held by MLPs, an increasing amount of assets are now held by Midstream Companies (which are taxable entities). This trend began in earnest during 2014 when Kinder Morgan acquired its related MLPs and has continued with ONEOK, Targa Resources and SemGroup completing similar transactions. MLPs and Midstream Companies are becoming much more similar, and it is increasingly important to include both when talking about the midstream industry. While we expect MLPs to continue to be a preferred structure to own midstream assets, we also expect that certain companies will opt to hold midstream assets in corporate form. We believe both structures make sense, and we are encouraged to see the number of Midstream Companies grow, as it means that there are more ways that the Fund can get exposure to quality midstream assets outside of its 25% allocation to publicly traded partnerships.

Performance Review

We primarily measure the Fund's performance based on its Net Asset Value Return, which is equal to the change in net asset value per share plus cash distributions paid during the period (assuming reinvestment through our dividend reinvestment program). For fiscal 2017, the Fund's Net Asset Value Return was negative 11.7%. During the same period, the total return for the Alerian MLP Index, or AMZ, was negative 6.8%. Though it is always challenging to compare the Fund's performance to a benchmark because the Fund invests in multiple energy-related subsectors, we believe the AMZ is a relevant benchmark given the Fund's weighting towards MLPs and Midstream Companies. Coming off a year of outperformance during fiscal 2016, we are disappointed to have underperformed the AMZ, but would note that closed-end funds typically underperform the index in a down market due to leverage and expenses. Our return on an asset-level basis (before the impact of leverage or expenses) was slightly better than the AMZ.

Another measure of the Fund's performance is Market Return (share price change plus reinvested dividends), which was negative 8.7% for fiscal 2017. This measure was better than our NAV Return because our stock price went from trading at an 11.9% discount to NAV per share at the beginning of the year to trading at a 9.0% discount to NAV at the end of the year.

As we discussed in last year's letter, there has been a trend of simplification transactions whereby MLPs (or corporate general partners) with lower yields acquire MLPs with a higher yield. This trend continued in 2017, and the resulting back-door distribution cuts, along with regular-way distribution cuts, reduced our net distributable income, or NDI. Accordingly, the board of directors believed it was appropriate to reduce the distribution from \$0.35 per share to \$0.30 per share for the distribution that was paid in July 2017. While we believe that most of these simplification transactions have occurred, there are still a handful of Midstream Companies that could choose to pursue simplification, and one, Energy Transfer, has indicated that it is likely to

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pursue a simplification transaction in 2019. We believe it is unlikely that we see many additional distribution cuts from MLPs in our portfolio.

While we do not expect many more distribution cuts, some MLPs/Midstream companies are placing less emphasis on distribution growth and more emphasis on building coverage. To a point, we believe this is positive for the sector. Companies need to be thoughtful and balanced when considering distribution increases (and such increases need to be supported by growing cash flows), but we believe investors will ultimately ascribe the best valuations to companies that pay out the majority of their cash flows to investors in the form of quarterly distributions. We are very much in favor of companies using a portion of cash flow to finance growth projects, but distributions are very important to equity investors.

Similarly, we believe a key piece of the value proposition for our investors is our quarterly distribution. Our goal is to pay an attractive distribution that is supported by the NDI generated from our portfolio investments. An important consideration when selecting portfolio investments is the yield those investments generate, but it is by no means the only consideration. As the sector evolves and the Fund's portfolio weightings shift among the different energy sub-sectors, we will evaluate our distribution (and distribution policy) to ensure it best positions the Fund to achieve its investment objective of generating a high total return.

Impact of Tax Reform

Let me take a moment to comment on the recently enacted Tax Cuts and Jobs Act (Tax Reform), both as it relates to the Fund and the MLP/Midstream sector. For MLPs, the best news coming out of Tax Reform is that the provisions in the tax code that allow energy companies to organize as publicly traded partnerships were left alone. For years, the prospect of Congress removing the exemption from corporate taxes was a constant overhang on the sector. MLPs (and unitholders) will also benefit from the immediate expensing of capital expenditures for the next five years, which should increase, all else equal, the percentage of distributions that is treated as return of capital (and thus tax deferred). Tax Reform also introduced a new limitation on the deductibility of net interest expense. For at least the next four years, we do not believe this limitation will have a meaningful impact on MLPs. For individual owners of MLPs, Tax Reform also will allow a deduction of 20% of the qualified income passed through from MLPs, which should enhance the attractiveness of owning MLPs. For the Midstream Companies in our portfolio, many do not pay a significant amount of cash taxes, and we believe the immediate expensing of capital expenditures should extend the time period during which these companies will pay minimal cash taxes.

For the Fund, Tax Reform will impose limitations on the deductibility of net interest expense. To the extent our deductions are limited by the new tax rules, we will be able to carry forward such deductions to reduce taxable income in future periods. We also expect to benefit from the immediate expensing of qualified capital expenditures by our portfolio companies, as we believe this will result in a higher tax shield on the distributions that they pay to the Fund and, all else equal, will result in a larger portion of the distributions that we pay to our shareholders being characterized as return of capital.

Outlook

While we have been in a very challenging market for more than three years, we believe the outlook for the Energy industry is very good, and we are particularly optimistic about the prospects for the midstream sector. A significant number of MLPs have addressed their IDRs, strengthened their balance sheets, right-sized their distributions and are focusing more on shareholder returns. Most companies have taken their medicine and are healthier for it today.

Moreover, the fundamentals for MLPs/Midstream Companies continue to improve and should lead to strong operating results. Domestic production levels are increasing and will soon be at record levels. Projects are being

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placed into service and operating results will start to reflect the impact of these new assets. Further, many companies will see additional opportunities to grow their businesses both from increased production levels and increased exports. There is little doubt that there is plenty to be excited about heading into 2018.

In addition to a strong fundamental outlook, valuations are supportive of continued recovery in MLP/Midstream equities. Currently, the AMZ stands at 302 and yields 7.0%. With 10-year U.S. Treasury Bonds currently yielding 2.65%, the MLP spread to Treasuries stands at 436 basis points, which is meaningfully higher than the historical average of approximately 300-350 basis points. The sector also looks attractive based on more traditional valuation metrics such as Enterprise Value to EBITDA and Price to Distributable Cash Flow multiples.

We are optimistic for continued recovery in the MLP/Midstream sector. In last year's letter, we said the worst was behind us and that was clearly true from a fundamental standpoint. We believed that stock price performance would follow fundamentals, but that didn't happen in 2017. This year, we believe that stock prices should catch up to the improved fundamentals and lead to strong returns. Needless to say, the fact that the AMZ is up 15% since year-end gives us even more confidence that our current expectation will be more accurate than last year's prediction.

We appreciate your investment in the Fund and look forward to executing on our business plan of achieving high total returns by investing in MLPs, Midstream Companies and other Energy Companies. We invite you to visit our website at kaynefunds.com for the latest updates.

Sincerely,

Kevin S. McCarthy

Chairman of the Board of Directors

and Chief Executive Officer

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| Holding | Category⁽¹⁾ | Percent of Long Term Investments as of November 30, | |
|--|-------------------------------|--|-------------|
| | | 2017 | 2016 |
| 1. ONEOK, Inc. ⁽²⁾ | Midstream Company | 7.8% | 7.3% |
| 2. Targa Resources Corp. | Midstream Company | 7.1 | 5.5 |
| 3. Plains GP Holdings, L.P. ⁽³⁾ | Midstream Company | 6.6 | 8.9 |
| 4. The Williams Companies, Inc. | Midstream Company | 6.0 | 2.6 |
| 5. Enbridge Energy Management, L.L.C. | Midstream Company | 5.9 | 8.2 |
| 6. Energy Transfer Partners, L.P. ⁽⁴⁾ | Midstream MLP | 3.8 | 2.8 |
| 7. GasLog Partners LP | Midstream Company | 3.8 | 2.8 |
| 8. KNOT Offshore Partners LP | Midstream Company | 3.7 | 3.3 |
| 9. Enbridge, Inc. ⁽⁵⁾ | Midstream Company | 3.7 | 0.5 |
| 10. MPLX LP | Midstream MLP | 3.6 | 1.9 |

(1) See Glossary of Key Terms for definitions. Midstream Company category includes Midstream Companies engaged in marine transportation (16% as of November 30, 2017 and 15% as of November 30, 2016).

(2) On June 30, 2017, ONEOK, Inc. (OKE) and ONEOK Partners, L.P. (OKS) completed a stock-for-unit merger. As of November 30, 2016 our combined investment in OKE and OKS represented 9.4% of long-term investments.

(3) Our investment includes our holdings of Plains GP Holdings, L.P. (PAGP) and our interest in Plains AAP, L.P. (PAGP-AAP). Our ownership of PAGP-AAP is exchangeable on a one-for-one basis into either PAGP shares or Plains All American Pipeline, L.P. units at our option.

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PORTFOLIO SUMMARY

(UNAUDITED)

- (4) On April 28, 2017, Energy Transfer Partners, L.P. (ETP) and Sunoco Logistics Partners L.P. (SXL) completed a unit-for-unit merger. As of November 30, 2016, our combined investment in ETP and SXL represented 4.4% of long-term investments.

- (5) On February 27, 2017, Enbridge, Inc. (ENB) and Spectra Energy Corp. (SE) completed a stock-for-stock merger. As of November 30, 2016, our combined investments in ENB and SE represented 3.6% of long-term investments.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

MANAGEMENT DISCUSSION

(UNAUDITED)

Fund Overview

Kayne Anderson Midstream/Energy Fund, Inc. is a non-diversified, closed-end fund. We commenced operations on November 24, 2010. Our shares of common stock are listed on the New York Stock Exchange under the symbol KMF.

Our investment objective is to provide a high level of total return with an emphasis on making quarterly cash distributions to our stockholders. We seek to achieve that investment objective by investing at least 80% of our total assets in the securities of companies in the Midstream/Energy Sector, consisting of (a) Midstream MLPs, (b) Midstream Companies, (c) Other MLPs and (d) Other Energy Companies. We anticipate that the majority of our investments will consist of investments in Midstream MLPs and Midstream Companies. Please see the Glossary of Key Terms for a description of these investment categories and for the meaning of capitalized terms not otherwise defined herein.

As of November 30, 2017, we had total assets of \$439 million, net assets applicable to our common stockholders of \$312 million (net asset value of \$14.15 per share), and 22.0 million shares of common stock outstanding. As of November 30, 2017, we held \$393 million in equity investments and \$41 million in debt investments.

Recent Events

On December 22, 2017, the Tax Cuts and Jobs Act (the Tax Reform Bill) was signed into law. Currently, we do not believe the bill will have a material impact on us given our intention to continue to qualify as a regulated investment company (RIC), which is generally not subject to U.S. federal income tax. The Tax Reform Bill includes a limitation on the deductibility of net interest expense. To the extent our deductions are limited in any given year, we will be able to utilize such deductions in future periods if we have sufficient taxable income. Further, the Tax Reform Bill permits immediate expensing of qualified capital expenditures for the next five years. As a result, our portfolio companies may pass through more deductions to us which may result in a higher portion of distributions received to be characterized as return of capital.

Results of Operations For the Three Months Ended November 30, 2017

Investment Income. Investment income totaled \$2.9 million for the quarter and consisted primarily of net dividends and distributions and interest income on our investments. We received \$7.0 million of dividends and distributions, of which \$5.6 million was treated as return of capital. Return of capital was increased by \$0.9 million due to 2016 tax reporting information that we received in fiscal 2017. Interest income was \$1.5 million. We also received \$0.7 million of paid-in-kind dividends during the quarter, which are not included in investment income, but are reflected as an unrealized gain.

Operating Expenses. Operating expenses totaled \$3.2 million, including \$1.4 million of investment management fees, \$1.1 million of interest expense, \$0.4 million of preferred stock distributions and \$0.3 million of other operating expenses. Interest expense includes \$0.1 million of non-cash amortization of debt issuance costs.

Net Investment Loss. Our net investment income totaled \$0.3 million.

Net Realized Gains. We had net realized gains of \$3.6 million, which included \$0.2 million of net realized gains from option activity.

Net Change in Unrealized Gains. We had a net decrease in unrealized gains of \$17.9 million. The net decrease consisted of \$17.9 million of unrealized losses from investments.

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MANAGEMENT DISCUSSION

(UNAUDITED)

Net Decrease in Net Assets Resulting from Operations. We had a decrease in net assets resulting from operations of \$14.6 million. This decrease was comprised of net investment loss of \$0.3 million, net realized gains of \$3.6 million and a net decrease in unrealized gains of \$17.9 million, as noted above.

Results of Operations For the Fiscal Year Ended November 30, 2017

Investment Income. Investment income totaled \$17.0 million for the year and consisted primarily of net dividends and distributions and interest income on our investments. We received \$29.4 million of dividends and distributions, of which \$19.5 million was treated as return of capital. Return of capital was increased by \$0.9 million due to 2016 tax reporting information that was received in fiscal 2017. Interest income was \$7.1 million. We also received \$3.0 million of paid-in-kind dividends during the year, which are not included in investment income, but are reflected as an unrealized gain.

Operating Expenses. Operating expenses totaled \$13.9 million, including \$6.4 million of investment management fees, \$4.7 million of interest expense, \$1.5 million of preferred stock distributions and \$1.3 million of other operating expenses. Interest expense includes \$0.6 million of non-cash amortization of debt issuance costs. Preferred stock distributions include \$0.1 million of non-cash amortization.

Net Investment Income. Our net investment income totaled \$3.1 million.

Net Realized Gains. We had net realized gains of \$19.1 million, which includes \$0.7 million of net realized gains from option activity.

Net Change in Unrealized Gains. We had a net decrease in unrealized gains of \$65.3 million. The net decrease consisted of \$65.4 million of unrealized losses from investments and \$0.1 million of net unrealized gains from option activity.

Net Decrease in Net Assets Resulting from Operations. We had a decrease in net assets resulting from operations of \$43.1 million. This decrease was comprised of net investment income of \$3.1 million, net realized gains of \$19.1 million and net decrease in unrealized gains of \$65.3 million, as noted above.

Distributions to Common Stockholders

We pay quarterly distributions to our common stockholders, funded generally by net distributable income (NDI) generated from our portfolio investments. NDI is the amount of income received by us from our portfolio investments less operating expenses, subject to certain adjustments as described below. NDI is not a financial measure under the accounting principles generally accepted in the United States of America (GAAP). Refer to the Reconciliation of NDI to GAAP section below for a reconciliation of this measure to our results reported under GAAP.

Income from portfolio investments includes (a) cash dividends and distributions, (b) paid-in-kind dividends received (i.e., stock dividends), (c) interest income from debt securities and commitment fees from private investments in public equity (PIPE investments) and (d) net premiums received from the sale of covered calls.

Operating expenses include (a) investment management fees paid to our investment adviser (Kafa), (b) other expenses (mostly comprised of fees paid to other service providers), (c) accrual for estimated excise taxes (if any) and (d) interest expense and preferred stock distributions.

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(amounts in millions, except for per share amounts)

| | Three Months Ended November 30, 2017 | Fiscal Year Ended November 30, 2017 |
|--|---|--|
| Distributions and Other Income from Investments | | |
| Dividends ⁽¹⁾ | \$ 7.0 | \$ 29.4 |
| Paid-In-Kind Dividends ⁽¹⁾ | 0.7 | 3.0 |
| Interest Income | 1.6 | 7.5 |
| Net Premiums Received from Call Options Written | 0.2 | 0.9 |
| Total Distributions and Other Income from Investments | 9.5 | 40.8 |
| Expenses | | |
| Investment Management Fee | (1.4) | (6.4) |
| Other Expenses | (0.3) | (1.4) |
| Interest Expense | (1.0) | (4.1) |
| Preferred Stock Distributions | (0.4) | (1.4) |
| Net Distributable Income (NDI) | \$ 6.4 | \$ 27.5 |
| Weighted Shares Outstanding | 22.0 | 22.0 |
| NDI per Weighted Share Outstanding | \$ 0.292 | 1.250 |
| Adjusted NDI per Weighted Share Outstanding⁽²⁾ | \$ 0.295 | 1.265 |
| Distributions paid per Common Share⁽³⁾ | \$ 0.300 | 1.250 |

(1) See Note 2 – Significant Accounting Policies to the Financial Statements for additional information regarding paid-in-kind and non-cash dividends and distributions.

(2) Adjusted NDI for the fourth quarter and year includes \$0.1 million and \$0.4 million, respectively, of consideration received in the MarkWest Energy Partners, L.P. and MPLX LP merger that was intended to offset lower quarterly distributions as a result of the transaction. Because the acquiring entity has deemed part of the merger consideration to be compensation to help offset the lower quarterly distribution that unitholders of the acquired entity would receive after closing, we believe it to be appropriate to include this amount in Adjusted NDI. This merger consideration is not included in investment income for GAAP purposes, but rather is treated as additional consideration when calculating the realized or unrealized gain (loss) that results from the merger transaction.

(3) The distribution of \$0.30 per share for the fourth quarter of fiscal 2017 was paid on January 12, 2018. Distributions for fiscal 2017 include the quarterly distributions paid in April 2017, July 2017, October 2017 and January 2018.

Payment of future distributions is subject to Board of Directors approval, as well as meeting the covenants of our debt agreements and terms of our preferred stock. Because our quarterly distributions are funded primarily by NDI generated from our portfolio investments, the Board of Directors, in determining our quarterly distribution to common stockholders, gives a significant amount of consideration to the NDI and Adjusted NDI generated in the current quarter, as well as the NDI that our portfolio is expected to generate over the next twelve months. The Board of Directors also considers other factors, including but not limited to, realized and unrealized gains generated by the portfolio.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

MANAGEMENT DISCUSSION

(UNAUDITED)

Reconciliation of NDI to GAAP

The difference between distributions and other income from investments in the NDI calculation and total investment income as reported in our Statement of Operations is reconciled as follows:

GAAP recognizes that a significant portion of the cash distributions received from MLPs is characterized as a return of capital and therefore excluded from investment income, whereas the NDI calculation includes the return of capital portion of such distributions.

NDI includes the value of paid-in-kind dividends and distributions whereas such amounts are not included as investment income for GAAP purposes, but rather are recorded as unrealized gains upon receipt.

NDI includes commitment fees from PIPE investments, whereas such amounts are generally not included in investment income for GAAP purposes, but rather are recorded as a reduction to the cost of the investment.

Certain of our investments in debt securities were purchased at a discount or premium to the par value of such security. When making such investments, we consider the security's yield to maturity, which factors in the impact of such discount (or premium). Interest income reported under GAAP includes the non-cash accretion of the discount (or amortization of the premium) based on the effective interest method. When we calculate interest income for purposes of determining NDI, in order to better reflect the yield to maturity, the accretion of the discount (or amortization of the premium) is calculated on a straight-line basis to the earlier of the expected call date or the maturity date of the debt security.

We may sell covered call option contracts to generate income or to reduce our ownership of certain securities that we hold. In some cases, we are able to repurchase these call option contracts at a price less than the call premium that we received, thereby generating a profit. The premium we receive from selling call options, less (i) the amount that we pay to repurchase such call option contracts and (ii) the amount by which the market price of an underlying security is above the strike price at the time a new call option is written (if any), is included in NDI. For GAAP purposes, premiums received from call option contracts sold are not included in investment income. See Note 2 Significant Accounting Policies for a full discussion of the GAAP treatment of option contracts.

The treatment of expenses included in NDI also differs from what is reported in the Statement of Operations as follows:

The non-cash amortization or write-offs of capitalized debt issuance costs and preferred stock offering costs related to our financings is included in interest expense and distributions on preferred stock for GAAP purposes, but is excluded from our calculation of NDI.

NDI also includes recurring payments (or receipts) on interest rate swap contracts or the amortization of termination payments on interest rate swap contracts entered into in anticipation of an offering of unsecured notes (Notes) or mandatory redeemable preferred stock (MRP Shares). The termination payments on interest rate swap contracts are amortized over the term of the Notes or MRP Shares issued. For GAAP purposes, these amounts are included in the realized gains/losses section of the Statement of Operations.

Under GAAP, excise taxes are accrued when probable and estimable. For NDI, we exclude excise tax that is unrelated to the current fiscal period.

Liquidity and Capital Resources

At November 30, 2017, we had total leverage outstanding of \$126 million, which represented 29% of total assets. At quarter end, total leverage was comprised of \$91 million of Notes and \$35 million of MRP Shares. At November 30, 2017, we did not have any borrowings outstanding under our unsecured revolving credit facility (the Credit Facility) or our unsecured revolving term loan (the Term Loan), and we had \$2 million of cash

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

MANAGEMENT DISCUSSION

(UNAUDITED)

and cash equivalents. As of January 19, 2018, we had no borrowings outstanding under either our Credit Facility or Term Loan and we had \$9 million of cash and cash equivalents.

Our Credit Facility has a total commitment of \$75 million and matures on November 9, 2018. The interest rate on outstanding loan balances may vary between LIBOR plus 1.60% and LIBOR plus 2.25%, depending on our asset coverage ratios. We pay a fee of 0.30% per annum on any unused amounts of the Credit Facility.

Our Term Loan has a total commitment of \$35 million and matures on July 25, 2019. Borrowings under the Term Loan have an interest rate of LIBOR plus 1.50%. Amounts borrowed under the Term Loan may be repaid and subsequently borrowed. We pay a fee of 0.25% per annum on any unused amount of the Term Loan.

At November 30, 2017, we had \$91 million of Notes outstanding that mature between 2021 and 2023 and we had \$35 million of MRP Shares outstanding that are subject to mandatory redemption in 2021.

At November 30, 2017, our asset coverage ratios under the Investment Company Act of 1940, as amended (the "1940 Act"), were 481% for debt and 347% for total leverage (debt plus preferred stock). Our target asset coverage ratio with respect to our debt is 430%. At times we may be above or below this target depending on market conditions as well as certain other factors, including our target total leverage asset coverage ratio of 320% and the basic maintenance amount as stated in our rating agency guidelines.

As of November 30, 2017, our total leverage consisted 100% of fixed rate obligations. At such date, the weighted average interest/dividend rate on our total leverage was 3.93%.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****SCHEDULE OF INVESTMENTS****NOVEMBER 30, 2017****(amounts in 000 s)**

| Description | No. of Shares/Units | Value |
|---|------------------------|----------|
| Long-Term Investments 139.2% | | |
| Equity Investments⁽¹⁾ 126.0% | | |
| United States 116.6% | | |
| Midstream Companies⁽²⁾ 76.8% | | |
| Capital Product Partners L.P. Class B Units ⁽³⁾⁽⁴⁾⁽⁵⁾⁽⁶⁾ | 606 | \$ 4,752 |
| Cheniere Energy Partners LP Holdings, LLC | 50 | 1,393 |
| Dynagas LNG Partners LP ⁽⁵⁾ | 448 | 5,995 |
| Enbridge Energy Management, L.L.C. ⁽⁷⁾ | 1,891 | 25,527 |
| EnLink Midstream, LLC | 107 | 1,784 |
| GasLog Partners LP ⁽⁵⁾ | 740 | 16,347 |
| Golar LNG Partners LP ⁽⁵⁾ | 752 | 15,022 |
| Höegh LNG Partners LP ⁽⁵⁾ | 641 | 11,223 |
| Kinder Morgan, Inc. | 286 | 4,926 |
| KNOT Offshore Partners LP ⁽⁵⁾ | 802 | 16,194 |
| ONEOK, Inc. | 652 | 33,855 |
| Plains GP Holdings, L.P. ⁽⁵⁾⁽⁸⁾ | 703 | 14,465 |
| Plains GP Holdings, L.P. Plains AAP, L.P. ⁽⁵⁾⁽⁸⁾⁽⁹⁾ | 690 | 14,198 |
| SemGroup Corporation | 215 | 5,149 |
| Tallgrass Energy GP, LP ⁽⁵⁾ | 514 | 11,621 |
| Targa Resources Corp. | 714 | 30,997 |
| The Williams Companies, Inc. | 900 | 26,142 |
| | | 239,590 |
| Midstream MLPs⁽²⁾⁽¹⁰⁾ 34.2% | | |
| Andeavor Logistics LP | 167 | 7,453 |
| BP Midstream Partners LP ⁽¹¹⁾ | 155 | 2,834 |
| Buckeye Partners, L.P. | 125 | 5,734 |
| Crestwood Equity Partners LP | 147 | 3,519 |
| DCP Midstream, LP | 282 | 9,917 |
| Energy Transfer Partners, L.P. | 986 | 16,380 |
| Enterprise Products Partners L.P. ⁽¹²⁾ | 378 | 9,314 |
| EQT Midstream Partners, LP | 47 | 3,239 |
| Genesis Energy, L.P. | 15 | 324 |
| Global Partners LP | 260 | 4,517 |
| Magellan Midstream Partners, L.P. | 45 | 3,028 |
| MPLX LP | 439 | 15,749 |
| Noble Midstream Partners LP | 35 | 1,711 |
| NuStar Energy L.P. | 72 | 2,101 |
| Oasis Midstream Partners LP ⁽¹¹⁾ | 103 | 1,866 |
| Phillips 66 Partners LP | 39 | 1,810 |
| Shell Midstream Partners, L.P. | 22 | 603 |
| Summit Midstream Partners, LP | 234 | 4,425 |
| Tallgrass Energy Partners, LP | 16 | 703 |
| TC PipeLines, LP | 115 | 5,823 |

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| | | |
|--|-----|---------|
| Western Gas Partners, LP | 124 | 5,564 |
| | | 106,614 |
| Other Energy Companies 5.6% | | |
| Anadarko Petroleum Corporation 7.50% Tangible Equity Units ⁽¹³⁾ | 27 | 888 |
| Macquarie Infrastructure Corporation | 135 | 8,982 |

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****SCHEDULE OF INVESTMENTS****NOVEMBER 30, 2017****(amounts in 000 s)**

| Description | No. of Shares/Units | Value | | |
|---|--------------------------|--------------------------|-----------------------------|---------------|
| Other Energy Companies (continued) | | | | |
| NextEra Energy Partners, LP | 46 | \$ 1,788 | | |
| Royal Dutch Shell plc ADR Class B | 86 | 5,697 | | |
| | | 17,355 | | |
| Total United States (Cost \$372,433) | | 363,559 | | |
| Canada 9.4% | | | | |
| Midstream Companies⁽²⁾ 9.4% | | | | |
| Enbridge Inc. | 429 | 16,178 | | |
| Pembina Pipeline Corporation | 204 | 7,111 | | |
| TransCanada Corporation | 128 | 6,148 | | |
| Total Canada (Cost \$26,346) | | 29,437 | | |
| Total Equity Investments (Cost \$398,779) | | 392,996 | | |
| | Interest Rate | Maturity Date | Principal Amount | Value |
| Debt Instruments 13.2% | | | | |
| United States 8.8% | | | | |
| Upstream 7.8% | | | | |
| California Resources Corporation ⁽³⁾⁽⁸⁾ | 8.000% | 12/15/22 | \$ 12,925 | 9,613 |
| Eclipse Resources Corporation | 8.875 | 7/15/23 | 12,450 | 12,792 |
| Jones Energy Holdings, LLC | 9.250 | 3/15/23 | 2,600 | 1,872 |
| | | | | 24,277 |
| Midstream Company⁽²⁾ 1.0% | | | | |
| SemGroup Corporation ⁽³⁾ | 7.250 | 3/15/26 | 3,000 | 3,083 |
| Total United States (Cost \$27,018) | | | | 27,360 |
| Canada 4.4% | | | | |
| Upstream 4.4% | | | | |
| Athabasca Oil Corporation ⁽³⁾ | 9.875 | 2/24/22 | 6,000 | 5,850 |
| Jupiter Resources Inc. ⁽³⁾ | 8.500 | 10/1/22 | 11,480 | 7,945 |
| Total Canada (Cost \$15,220) | | | | 13,795 |
| Total Debt Investments (Cost \$42,238) | | | | 41,155 |

| | | |
|---|--------------------------------|--------------|
| Total Long-Term Investments (Cost \$441,017) | | 434,151 |
| | No. of Shares/Units | Value |
| Short-Term Investment 0.1% | | |
| Money Market Fund 0.1% | | |
| JPMorgan 100% U.S. Treasury Securities Money Market Fund Capital Shares, 0.97% ⁽⁵⁾ (Cost \$31) | 31 | 31 |
| Total Investments 139.2% (Cost \$441,048) | | 434,182 |
| Debt | | (91,000) |
| Mandatory Redeemable Preferred Stock at Liquidation Value | | (35,000) |
| Other Assets in Excess of Other Liabilities | | 3,661 |
| Net Assets Applicable to Common Stockholders | | \$ 311,843 |

See accompanying notes to financial statements.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

SCHEDULE OF INVESTMENTS

NOVEMBER 30, 2017

(amounts in 000 s)

- (1) Unless otherwise noted, equity investments are common units/common shares.
- (2) Refer to the *Glossary of Key Terms* for the definitions of Midstream Companies and Midstream MLPs.
- (3) The Fund's ability to sell this security is subject to certain legal or contractual restrictions. As of November 30, 2017, the aggregate value of restricted securities held by the Fund was \$45,441 (10.3% of total assets), which included \$40,689 of Level 2 securities and \$4,752 of Level 3 securities. See Note 7 *Restricted Securities*.
- (4) Fair valued security. See Notes 2 and 3 in Notes to Financial Statements.
- (5) This company is structured like an MLP, but is not treated as a publicly-traded partnership for regulated investment company (RIC) qualification purposes.
- (6) Class B Units are convertible on a one-for-one basis into common units of Capital Product Partners L.P. (CPLP) and are senior to the common units in terms of liquidation preference and priority of distributions (liquidation preference of \$9.00 per unit). The Class B Units pay quarterly cash distributions and are convertible at any time at the option of the holder. The Class B Units paid a distribution of \$0.21375 per unit for the fourth quarter.
- (7) Dividends are paid-in-kind.
- (8) The Fund believes that it is an affiliate of Plains AAP, L.P. (PAGP-AAP) and Plains GP Holdings, L.P. (PAGP). The Fund does not believe that it is an affiliate of California Resources Corporation. See Note 5 *Agreements and Affiliations*.
- (9) The Fund's ownership of PAGP-AAP is exchangeable on a one-for-one basis into either PAGP shares or Plains All American Pipeline, L.P. (PAA) units at the Fund's option. The Fund values its PAGP-AAP investment on an as-exchanged basis based on the higher public market value of either PAGP or PAA. As of November 30, 2017, the Fund's PAGP-AAP investment is valued at PAGP's closing price. See Notes 3 and 7 in Notes to Financial Statements.
- (10) Unless otherwise noted, securities are treated as a publicly-traded partnership for RIC qualification purposes. To qualify as a RIC for tax purposes, the Fund may directly invest up to 25% of its total assets in equity and debt securities of entities treated as publicly-traded partnerships. The Fund had 24.3% of its total assets invested in publicly-traded partnerships at November 30, 2017. It is the Fund's intention to be treated as a RIC for tax purposes.

- (11) Security is not currently paying cash distributions but is expected to pay cash distributions within the next 12 months.
- (12) In lieu of cash distributions, the Fund has elected to receive distributions in additional units through the partnership's dividend reinvestment program.
- (13) Security is comprised of a prepaid equity purchase contract and a senior amortizing note. Unless settled earlier, each prepaid equity purchase contract will settle on June 7, 2018 for between 0.7159 and 0.8591 Western Gas Equity Partners, LP (WGP) common units (subject to Anadarko Petroleum Corporation's (APC) right to deliver APC common stock in lieu of WGP common units). The Fund receives a quarterly payment of 7.50% per annum on the \$50 per unit stated amount of the security.
- (14) The rate indicated is the current yield as of November 30, 2017.

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****STATEMENT OF ASSETS AND LIABILITIES****NOVEMBER 30, 2017****(amounts in 000 s, except share and per share amounts)**

| | |
|---|-------------------|
| ASSETS | |
| Investments, at fair value: | |
| Non-affiliated (Cost \$409,623) | \$ 405,488 |
| Affiliated (Cost \$31,394) | 28,663 |
| Short-term investments (Cost \$31) | 31 |
| | |
| Total investments (Cost \$441,048) | 434,182 |
| Cash | 2,000 |
| Deposits with brokers | 248 |
| Receivable for securities sold | 275 |
| Interest, dividends and distributions receivable | 1,894 |
| Deferred credit facility and term loan offering costs and other assets | 742 |
| | |
| Total Assets | 439,341 |
| | |
| LIABILITIES | |
| Payable for securities purchased | 132 |
| Investment management fee payable | 463 |
| Accrued directors' fees and expenses | 84 |
| Accrued expenses and other liabilities | 1,480 |
| Notes | 91,000 |
| Unamortized notes issuance costs | (407) |
| Mandatory redeemable preferred stock, \$25.00 liquidation value per share (1,400,000 shares issued and outstanding) | 35,000 |
| Unamortized mandatory redeemable preferred stock issuance costs | (254) |
| | |
| Total Liabilities | 127,498 |
| | |
| NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS | \$ 311,843 |
| | |
| NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS CONSIST OF | |
| Common stock, \$0.001 par value (22,277,499 shares issued, 22,034,170 shares outstanding and, 198,600,000 shares authorized) | \$ 22 |
| Paid-in capital | 445,109 |
| Accumulated net investment income less distributions not treated as tax return of capital | (9,104) |
| Accumulated net realized losses less distributions not treated as tax return of capital | (117,312) |
| Net unrealized gains | (6,872) |
| | |
| NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS | \$ 311,843 |
| | |
| NET ASSET VALUE PER COMMON SHARE | \$ 14.15 |

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****STATEMENT OF OPERATIONS****FOR THE FISCAL YEAR ENDED NOVEMBER 30, 2017****(amounts in 000 s)****INVESTMENT INCOME****Income**

Dividends and distributions:

Non-affiliated investments \$ 26,752

Affiliated investments 2,675

Total dividends and distributions (after foreign taxes withheld of \$144) 29,427

Return of capital (19,551)

Net dividends and distributions 9,876

Interest income 7,140

Total Investment Income 17,016

Expenses

Investment management fees 6,359

Professional fees 392

Directors' fees and expenses 323

Administration fees 219

Reports to stockholders 102

Insurance 89

Custodian fees 67

Other expenses 152

Total Expenses before interest expense and preferred distributions 7,703

Interest expense and amortization of offering costs 4,660

Distributions on mandatory redeemable preferred stock and amortization of offering costs 1,490

Total Expenses 13,853

Net Investment Income 3,163**REALIZED AND UNREALIZED GAINS (LOSSES)****Net Realized Gains (Losses)**

Investments non-affiliated 18,360

Foreign currency transactions (17)

Options 724

Net Realized Gains 19,067

Net Change in Unrealized Gains (Losses)

Investments non-affiliated (48,306)

Investments affiliated (17,124)

Foreign currency translations 18

Options 113

| | |
|---|--------------------|
| Net Change in Unrealized Gains | (65,299) |
| Net Realized and Unrealized Losses | (46,232) |
| NET DECREASE IN NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS RESULTING FROM OPERATIONS | (\$ 43,069) |

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****STATEMENT OF CHANGES IN NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS**

(amounts in 000 s, except share amounts)

| | For the Fiscal Year Ended November 30, | |
|---|---|----------------------|
| | 2017 | 2016 |
| OPERATIONS | | |
| Net investment income (loss) ⁽¹⁾ | \$ 3,163 | \$ (1,455) |
| Net realized gains (losses) | 19,067 | (101,693) |
| Net change in unrealized gains (losses) | (65,299) | 135,426 |
| Net Increase (Decrease) in Net Assets Resulting from Operations | (43,069) | 32,278 |
| DIVIDENDS AND DISTRIBUTIONS TO COMMON STOCKHOLDERS ⁽²⁾ | | |
| Dividends | (609) | (32,915) |
| Distributions net long-term capital gains | | |
| Distributions return of capital | (28,036) | |
| Dividends and Distributions to Common Stockholders | (28,645) | (32,915) |
| CAPITAL STOCK TRANSACTIONS | | |
| Issuance of 136,202 shares of common stock | | 1,438 ⁽³⁾ |
| Issuance of 234,832 shares of common stock from reinvestment of dividends and distributions | | 2,278 |
| Net Increase in Net Assets Applicable to Common Stockholders from Capital Stock Transactions | | 3,716 |
| Total Increase (Decrease) in Net Assets Applicable to Common Stockholders | (71,714) | 3,079 |
| NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS | | |
| Beginning of year | 383,557 | 380,478 |
| End of year | \$ 311,843 | \$ 383,557 |

(1) Distributions on the Fund's mandatory redeemable preferred stock (MRP Shares) are treated as an operating expense under GAAP and are included in the calculation of net investment income (loss). See Note 2 Significant Accounting Policies. Distributions in the amount of \$1,421 paid to holders of MRP Shares for the fiscal year ended November 30, 2017 were characterized as dividends. Distributions in the amount of \$2,441 paid to holders of MRP Shares for the fiscal year ended November 30, 2016 were characterized as dividends (\$2,141) and return of capital (\$300). A portion of the distributions characterized as dividends for the fiscal years ended November 30, 2017 and 2016 was eligible to be treated as qualified dividend income. This characterization is based on the Fund's earnings and profits.

(2) Distributions paid to common stockholders for the fiscal years ended November 30, 2017 and 2016 were characterized as either dividends (a portion of which was eligible to be treated as qualified dividend income) or distributions (long term capital gains or return of capital). This characterization is based on the Fund's earnings and profits.

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- (3) On December 17, 2015, the Fund's investment advisor, KA Fund Advisors, LLC, purchased \$1,438 of newly issued shares funded in part with the after-tax management fees received during the fourth quarter of fiscal 2015.

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****STATEMENT OF CASH FLOWS****FOR THE FISCAL YEAR ENDED NOVEMBER 30, 2017****(amounts in 000 s)****CASH FLOWS FROM OPERATING ACTIVITIES**

| | |
|---|-------------|
| Net decrease in net assets resulting from operations | \$ (43,069) |
| Adjustments to reconcile net decrease in net assets resulting from operations to net cash provided by operating activities: | |
| Return of capital distributions | 19,551 |
| Net realized gains (excluding foreign currency transactions) | (19,084) |
| Net change in unrealized gains (excluding foreign currency translations) | 65,317 |
| Accretion of bond discounts, net | (1,165) |
| Purchase of long-term investments | (128,722) |
| Proceeds from sale of long-term investments | 163,449 |
| Purchase of short-term investments | (31) |
| Increase in receivable for securities sold | (258) |
| Increase in interest, dividends and distributions receivable | (23) |
| Amortization of deferred debt offering costs | 622 |
| Amortization of mandatory redeemable preferred stock offering costs | 69 |
| Decrease in other assets | 97 |
| Increase in payable for securities purchased | 132 |
| Decrease in investment management fee payable | (76) |
| Decrease in premiums received on call option contracts written | (93) |
| Decrease in accrued directors' fees and expenses | (1) |
| Decrease in accrued expenses and other liabilities | (87) |

| | |
|--|---------------|
| Net Cash Provided by Operating Activities | 56,628 |
|--|---------------|

CASH FLOWS FROM FINANCING ACTIVITIES

| | |
|--|----------|
| Decrease in borrowings under term loan | (27,000) |
| Cash distributions paid to common stockholders | (28,645) |

| | |
|--|-----------------|
| Net Cash Used in Financing Activities | (55,645) |
|--|-----------------|

| | |
|-----------------------------|------------|
| NET INCREASE IN CASH | 983 |
|-----------------------------|------------|

| | |
|-------------------------------|--------------|
| CASH BEGINNING OF YEAR | 1,017 |
|-------------------------------|--------------|

| | |
|-------------------------|-----------------|
| CASH END OF YEAR | \$ 2,000 |
|-------------------------|-----------------|

Supplemental disclosure of cash flow information:

During the fiscal year ended November 30, 2017, interest paid related to debt obligations was \$4,047.

During the fiscal year ended November 30, 2017, the Fund received \$3,506 of paid-in-kind and non-cash dividends and distributions. See Note 2 Significant Accounting Policies.

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****FINANCIAL HIGHLIGHTS**

(amounts in 000 s, except share and per share amounts)

| | For the Fiscal Year Ended November 30, | | |
|---|---|------------|-----------------------|
| | 2017 | 2016 | 2015 |
| Per Share of Common Stock⁽¹⁾ | | | |
| Net asset value, beginning of period | \$ 17.41 | \$ 17.56 | \$ 39.51 |
| Net investment income (loss) ⁽²⁾ | 0.14 | (0.07) | 0.30 |
| Net realized and unrealized gains (losses) | (2.10) | 1.43 | (18.42) |
| Total income (loss) from operations | (1.96) | 1.36 | (18.12) |
| Common dividends – dividend income ⁽³⁾ | (0.03) | (1.50) | (1.68) |
| Common distributions – long-term capital gains ⁽³⁾ | | | (2.14) |
| Common distributions – return of capital ⁽³⁾ | (1.27) | | |
| Total dividends and distributions – common | (1.30) | (1.50) | (3.82) ⁽⁴⁾ |
| Effect of shares issued in reinvestment of distributions | | (0.01) | (0.01) |
| Effect of issuance of common stock | | | |
| Effect of common stock repurchased | | | |
| Net asset value, end of period | \$ 14.15 | \$ 17.41 | \$ 17.56 |
| Market value per share of common stock, end of period | \$ 12.88 | \$ 15.33 | \$ 15.46 |
| Total investment return based on common stock market value ⁽⁵⁾ | (8.7)% | 12.7% | (50.2)% |
| Total investment return based on net asset value ⁽⁷⁾ | (11.7)% | 12.7% | (48.7)% |
| Supplemental Data and Ratios⁽⁸⁾ | | | |
| Net assets applicable to common stockholders, end of period | \$ 311,843 | \$ 383,557 | \$ 380,478 |
| Ratio of expenses to average net assets | | | |
| Management fees ⁽⁹⁾ | 1.7% | 1.8% | 1.9% |
| Other expenses | 0.4 | 0.5 | 0.2 |
| Subtotal | 2.1 | 2.3 | 2.1 |
| Interest expense and distributions on mandatory redeemable preferred stock ⁽²⁾ | 1.7 | 3.8 | 2.5 |
| Management fee waiver | | | |
| Excise taxes | | | 0.4 |
| Total expenses | 3.8% | 6.1% | 5.0% |
| Ratio of net investment income (loss) to average net assets ⁽²⁾ | 0.9% | (0.5)% | 1.0% |
| Net increase (decrease) in net assets applicable to common stockholders resulting from operations to average net assets | (11.9)% | 10.3% | (58.3)% |
| Portfolio turnover rate | 25.5% | 48.2% | 45.3% |
| Average net assets | \$ 360,869 | \$ 314,015 | \$ 672,534 |
| Notes outstanding, end of period ⁽¹⁰⁾ | \$ 91,000 | \$ 91,000 | \$ 185,000 |
| Credit facility outstanding, end of period ⁽¹⁰⁾ | | \$ | \$ |

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| | | | |
|---|------------|------------|------------|
| Term loan outstanding, end of period ⁽¹⁰⁾ | | \$ 27,000 | \$ |
| Mandatory redeemable preferred stock, end of period ⁽¹⁰⁾ | \$ 35,000 | \$ 35,000 | \$ 70,000 |
| Average shares of common stock outstanding | 22,034,170 | 21,975,582 | 21,657,943 |
| Asset coverage of total debt ⁽¹¹⁾ | 481.1% | 454.7% | 343.5% |
| Asset coverage of total leverage (debt and preferred stock) ⁽¹²⁾ | 347.5% | 350.7% | 249.2% |
| Average amount of borrowings per share of common stock during the period ⁽¹⁾ | \$ 5.16 | \$ 4.86 | \$ 11.16 |

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****FINANCIAL HIGHLIGHTS**

(amounts in 000 s, except share and per share amounts)

| | For the Fiscal Year Ended | | |
|---|---------------------------|----------------------|------------|
| | 2014 | November 30, 2013 | 2012 |
| Per Share of Common Stock⁽¹⁾ | | | |
| Net asset value, beginning of period | \$ 35.75 | \$ 29.01 | \$ 25.94 |
| Net investment income (loss) ⁽²⁾ | (0.01) | (0.06) | 0.17 |
| Net realized and unrealized gains (losses) | 5.61 | 8.61 | 4.64 |
| Total income (loss) from operations | 5.60 | 8.55 | 4.81 |
| Common dividends dividend income ⁽³⁾ | (1.57) | (1.15) | (1.30) |
| Common distributions long-term capital gain ⁽³⁾ | (0.34) | (0.66) | (0.41) |
| Common distributions return of capital ⁽⁴⁾ | | | |
| Total dividends and distributions common | (1.91) | (1.81) | (1.71) |
| Effect of shares issued in reinvestment of distributions | (0.02) | | (0.03) |
| Effect of issuance of common stock | | | |
| Effect of common stock repurchased | 0.09 | | |
| Net asset value, end of period | \$ 39.51 | \$ 35.75 | \$ 29.01 |
| Market value per share of common stock, end of period | \$ 35.82 | \$ 32.71 | \$ 28.04 |
| Total investment return based on common stock market value ⁽⁵⁾ | 15.3% | 23.5% | 33.3% |
| Total investment return based on net asset value ⁽⁷⁾ | 16.4% | 30.5% | 19.4% |
| Supplemental Data and Ratios⁽⁸⁾ | | | |
| Net assets applicable to common stockholders, end of period | \$ 854,257 | \$ 788,057 | \$ 635,226 |
| Ratio of expenses to average net assets | | | |
| Management fees ⁽⁹⁾ | 1.7% | 1.8% | 1.7% |
| Other expenses | 0.2 | 0.2 | 0.3 |
| Subtotal | 1.9 | 2.0 | 2.0 |
| Interest expense and distributions on mandatory redeemable preferred stock ⁽²⁾ | 1.7 | 1.8 | 1.8 |
| Management fee waiver | | | |
| Excise taxes | | 0.1 | |
| Total expenses | 3.6% | 3.9% | 3.8% |
| Ratio of net investment income (loss) to average net assets ⁽²⁾ | (0.0)% | (0.2)% | 0.6% |
| Net increase (decrease) in net assets applicable to common stockholders resulting from operations to average net assets | 14.0% | 25.9% | 16.8% |
| Portfolio turnover rate | 45.3% | 49.1% | 67.6% |
| Average net assets | \$ 887,585 | \$ 726,248 | \$ 620,902 |
| Notes outstanding, end of period ⁽¹⁰⁾ | \$ 235,000 | \$ 205,000 | \$ 165,000 |
| Credit facility outstanding, end of period ⁽¹⁰⁾ | \$ | \$ 50,000 | \$ 48,000 |
| Term loan outstanding, end of period ⁽¹⁰⁾ | \$ 46,000 | \$ | \$ |
| Mandatory redeemable preferred stock, end of period ⁽¹⁰⁾ | \$ 105,000 | \$ 65,000 | \$ 65,000 |

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| | | | |
|---|------------|------------|------------|
| Average shares of common stock outstanding | 21,897,671 | 21,969,288 | 21,794,596 |
| Asset coverage of total debt ⁽¹⁾ | 441.4% | 434.5% | 428.7% |
| Asset coverage of total leverage (debt and preferred stock) ⁽¹²⁾ | 321.3% | 346.3% | 328.5% |
| Average amount of borrowings per share of common stock during the period ⁽¹⁾ | \$ 12.84 | \$ 10.51 | \$ 8.85 |

See accompanying notes to financial statements.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****FINANCIAL HIGHLIGHTS**

(amounts in 000 s, except share and per share amounts)

| | For the Fiscal Year Ended November 30, 2011 | For the Period November 24, 2010 ⁽¹³⁾ through November 30, 2010 |
|---|---|--|
| Per Share of Common Stock⁽¹⁾ | | |
| Net asset value, beginning of period | \$ 23.80 | \$ 23.83 ⁽¹⁴⁾ |
| Net investment income (loss) ⁽²⁾ | 0.29 | (0.02) |
| Net realized and unrealized gains (losses) | 3.12 | (0.01) |
| Total income (loss) from operations | 3.41 | (0.03) |
| Common dividends dividend income ⁽³⁾ | (1.20) | |
| Common distributions long-term capital gains ⁽³⁾ | | |
| Common distributions return of capital ⁽³⁾ | | |
| Total dividends and distributions common | (1.20) | |
| Effect of shares issued in reinvestment of distributions | (0.04) | |
| Effect of issuance of common stock | (0.03) | |
| Effect of common stock repurchased | | |
| Net asset value, end of period | \$ 25.94 | \$ 23.80 |
| Market value per share of common stock, end of period | \$ 22.46 | \$ 25.00 |
| Total investment return based on common stock market value ⁽⁵⁾ | (5.5)% | 0.0% ⁽⁶⁾ |
| Total investment return based on net asset value ⁽⁷⁾ | 14.7% | (0.1)% ⁽⁶⁾ |
| Supplemental Data and Ratios⁽⁸⁾ | | |
| Net assets applicable to common stockholders, end of period | \$ 562,044 | \$ 452,283 |
| Ratio of expenses to average net assets | | |
| Management fees ⁽⁹⁾ | 1.6% | 1.3% |
| Other expenses | 0.3 | 0.3 ⁽¹⁵⁾ |
| Subtotal | 1.9 | 1.6 |
| Interest expense and distributions on mandatory redeemable preferred stock ⁽²⁾ | 1.3 | |
| Management fee waiver | (0.3) | (0.3) |
| Excise taxes | | |
| Total expenses | 2.9% | 1.3% |
| Ratio of net investment income (loss) to average net assets ⁽²⁾ | 1.1% | (1.3)% ⁽¹⁵⁾ |
| Net increase (decrease) in net assets applicable to common stockholders resulting from operations to average net assets | 13.4% | (0.1)% ⁽⁶⁾ |
| Portfolio turnover rate | 74.1% | 0.0% ⁽⁶⁾ |
| Average net assets | \$ 537,044 | \$ 452,775 |

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| | | |
|---|------------|------------|
| Notes outstanding, end of period ⁽¹⁰⁾ | \$ 115,000 | \$ |
| Credit facility outstanding, end of period ⁽¹⁰⁾ | \$ 45,000 | \$ |
| Term loan outstanding, end of period ⁽¹⁰⁾ | \$ | \$ |
| Mandatory redeemable preferred stock, end of period ⁽¹⁰⁾ | \$ 35,000 | \$ |
| Average shares of common stock outstanding | 21,273,512 | 19,004,000 |
| Asset coverage of total debt ⁽¹¹⁾ | 473.2% | |
| Asset coverage of total leverage (debt and preferred stock) ⁽¹²⁾ | 388.2% | |
| Average amount of borrowings per share of common stock during the period ⁽¹⁾ | \$ 6.50 | |

See accompanying notes to financial statements.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

FINANCIAL HIGHLIGHTS

(amounts in 000 s, except share and per share amounts)

- (1) Based on average shares of common stock outstanding.
- (2) Distributions on the Fund's MRP Shares are treated as an operating expense under GAAP and are included in the calculation of net investment income (loss). See Note 2 Significant Accounting Policies.
- (3) The information presented for each period is a characterization of the total distributions paid to the common stockholders as either dividend income (a portion of which was eligible to be treated as qualified dividend income) or distributions (long-term capital gains or return of capital) and is based on the Fund's earnings and profits.
- (4) Includes special distribution of \$1.80 per share paid in July 2015.
- (5) Total investment return based on market value is calculated assuming a purchase of common stock at the market price on the first day and a sale at the current market price on the last day of the period reported. The calculation also assumes reinvestment of distributions at actual prices pursuant to the Fund's dividend reinvestment plan.
- (6) Not annualized.
- (7) Total investment return based on net asset value is calculated assuming a purchase of common stock at the net asset value on the first day and a sale at the net asset value on the last day of the period reported. The calculation also assumes reinvestment of distributions at actual prices pursuant to the Fund's dividend reinvestment plan.
- (8) Unless otherwise noted, ratios are annualized.
- (9) Ratio reflects total management fee before waiver, if any.
- (10) Principal/liquidation value.
- (11) Calculated pursuant to section 18(a)(1)(A) of the 1940 Act. Represents the value of total assets less all liabilities not represented by Notes (principal value) or any other senior securities representing indebtedness and MRP Shares (liquidation value) divided by the aggregate amount of Notes and any other senior securities representing indebtedness. Under the 1940 Act, the Fund may not declare or make any

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distribution on its common stock nor can it incur additional indebtedness if at the time of such declaration or incurrence its asset coverage with respect to senior securities representing indebtedness would be less than 300%. For purposes of this test, the Credit Facility and the Term Loan are considered senior securities representing indebtedness.

- (12) Calculated pursuant to section 18(a)(2)(A) of the 1940 Act. Represents the value of total assets less all liabilities not represented by Notes (principal value), any other senior securities representing indebtedness and MRP Shares divided by the aggregate amount of Notes, any other senior securities representing indebtedness and MRP Shares (liquidation value). Under the 1940 Act, the Fund may not declare or make any distribution on its common stock nor can it issue additional preferred stock if at the time of such declaration or issuance, its asset coverage with respect to all senior securities would be less than 200%. In addition to the limitations under the 1940 Act, the Fund, under the terms of its MRP Shares, would not be able to declare or pay any distributions on its common stock if such declaration would cause its asset coverage with respect to all senior securities to be less than 225%. For purposes of these asset coverage ratio tests, the Credit Facility and the Term Loan are considered senior securities representing indebtedness.
- (13) Commencement of operations.
- (14) Initial public offering price of \$25.00 per share less underwriting discounts of \$1.125 per share and offering costs of \$0.05 per share.
- (15) For purposes of annualizing other expenses of the Fund, professional fees and reports to stockholders are fees associated with the annual audit and annual report and therefore have not been annualized.

See accompanying notes to financial statements.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amounts in 000 s, except number of option contracts, share and per share amounts)

1. Organization

Kayne Anderson Midstream/Energy Fund, Inc. (the Fund) was organized as a Maryland corporation on August 26, 2010 and commenced operations on November 24, 2010. The Fund is registered under the Investment Company Act of 1940, as amended (the 1940 Act), as a non-diversified, closed-end investment management company. The Fund's investment objective is to provide a high level of return with an emphasis on making quarterly cash distributions to its stockholders. The Fund seeks to achieve that investment objective by investing at least 80% of its total assets in the securities of companies in the Midstream/Energy Sector, consisting of (a) Midstream MLPs, (b) Midstream Companies, (c) Other MLPs and (d) Other Energy Companies. The Fund's shares of common stock are listed on the New York Stock Exchange, Inc. (NYSE) under the symbol KMF.

2. Significant Accounting Policies

The following is a summary of the significant accounting policies that the Fund uses to prepare its financial statements in accordance with accounting principles generally accepted in the United States of America (GAAP). The Fund is an investment company and follows accounting and reporting guidance of the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) Topic 946 Financial Services Investment Companies.

A. Use of Estimates The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amount of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of income and expenses during the period. Actual results could differ materially from those estimates.

B. Cash and Cash Equivalents Cash and cash equivalents include short-term, liquid investments with an original maturity of three months or less and include money market fund accounts.

C. Calculation of Net Asset Value The Fund determines its net asset value on a daily basis and reports its net asset value on its website. Net asset value is computed by dividing the value of the Fund's assets (including accrued interest and distributions), less all of its liabilities (including accrued expenses, distributions payable and any indebtedness) and the liquidation value of any outstanding preferred stock, by the total number of common shares outstanding.

D. Investment Valuation Readily marketable portfolio securities listed on any exchange other than the NASDAQ Stock Market, Inc. (NASDAQ) are valued, except as indicated below, at the last sale price on the business day as of which such value is being determined. If there has been no sale on such day, the securities are valued at the mean of the most recent bid and ask prices on such day. Securities admitted to trade on the NASDAQ are valued at the NASDAQ official closing price. Portfolio securities traded on more than one securities exchange are valued at the last sale price on the business day as of which such value is being determined at the close of the exchange representing the principal market for such securities.

Equity securities traded in the over-the-counter market, but excluding securities admitted to trading on the NASDAQ, are valued at the closing bid prices. Debt securities that are considered bonds are valued by using the mean of the bid and ask prices provided by an independent pricing service or, if such prices are not available or in the judgment of KA Fund Advisors, LLC (KAFA) such prices are stale or do not represent fair value, by an independent broker. For debt securities that are considered bank loans, the fair market value is determined by using the mean of the bid and ask prices provided by the agent or syndicate bank or principal market maker. When price quotes for securities are not available, or such prices are stale or do not represent fair value in the judgment of KAFA, fair market value will be determined using the Fund's valuation process for securities that are privately issued or otherwise restricted as to resale.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amounts in 000 s, except number of option contracts, share and per share amounts)

Exchange-traded options and futures contracts are valued at the last sales price at the close of trading in the market where such contracts are principally traded or, if there was no sale on the applicable exchange on such day, at the mean between the quoted bid and ask price as of the close of such exchange.

The Fund holds securities that are privately issued or otherwise restricted as to resale. For these securities, as well as any security for which (a) reliable market quotations are not available in the judgment of KAFA, or (b) the independent pricing service or independent broker does not provide prices or provides a price that in the judgment of KAFA is stale or does not represent fair value, shall each be valued in a manner that most fairly reflects fair value of the security on the valuation date. Unless otherwise determined by the Board of Directors, the following valuation process is used for such securities:

Investment Team Valuation. The applicable investments are valued by senior professionals of KAFA who are responsible for the portfolio investments. The investments will be valued monthly, with new investments valued at the time such investment was made.

Investment Team Valuation Documentation. Preliminary valuation conclusions will be determined by senior management of KAFA. Such valuations and supporting documentation are submitted to the Valuation Committee (a committee of the Fund's Board of Directors) and the Board of Directors on a quarterly basis.

Valuation Committee. The Valuation Committee meets to consider the valuations submitted by KAFA at the end of each quarter. Between meetings of the Valuation Committee, a senior officer of KAFA is authorized to make valuation determinations. All valuation determinations of the Valuation Committee are subject to ratification by the Board of Directors at its next regular meeting.

Valuation Firm. Quarterly, a third-party valuation firm engaged by the Board of Directors reviews the valuation methodologies and calculations employed for these securities, unless the aggregate fair value of such security is less than 0.1% of total assets.

Board of Directors Determination. The Board of Directors meets quarterly to consider the valuations provided by KAFA and the Valuation Committee and ratify valuations for the applicable securities. The Board of Directors considers the report provided by the third-party valuation firm in reviewing and determining in good faith the fair value of the applicable portfolio securities.

As of November 30, 2017, the Fund held 1.5% of its net assets applicable to common stockholders (1.1% of total assets) in securities that were fair valued pursuant to the procedures adopted by the Board of Directors (Level 3 securities). The aggregate fair value of these securities at November 30, 2017 was \$4,752. See Note 3 Fair Value and Note 7 Restricted Securities.

E. Derivative Financial Instruments The Fund may utilize derivative financial instruments in its operations.

In October 2016, the Securities and Exchange Commission (SEC) adopted new rules and forms, and amendments to certain current rules and forms, to modernize reporting and disclosure of information by registered investment companies. The amendments to Regulation S-X required standardized, enhanced disclosure about derivatives in investment company financial statements, and changed the rules governing the form and content of such financial statements. The Fund adopted the amendments to Regulation S-X as of August 1, 2017, which requires disclosure of the notional amount of open call option contracts written. As of November 30, 2017, the Fund did not have any open option contracts.

Interest rate swap contracts. The Fund may use hedging techniques such as interest rate swaps to mitigate potential interest rate risk on a portion of the Fund's leverage. Such interest rate swaps would principally be used to protect the Fund against higher costs on its leverage resulting from increases in interest rates. The Fund does not hedge any interest rate risk associated with portfolio holdings. Interest rate transactions the Fund may use for

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amounts in 000 s, except number of option contracts, share and per share amounts)

hedging purposes may expose it to certain risks that differ from the risks associated with its portfolio holdings. A decline in interest rates may result in a decline in the value of the swap contracts, which, everything else being held constant, would result in a decline in the net assets of the Fund. In addition, if the counterparty to an interest rate swap defaults, the Fund would not be able to use the anticipated net receipts under the interest rate swap to offset its cost of financial leverage.

Interest rate swap contracts are recorded at fair value with changes in value during the reporting period, and amounts accrued under the agreements, included as unrealized gains or losses in the Statement of Operations. Monthly cash settlements under the terms of the interest rate swap agreements or termination payments are recorded as realized gains or losses in the Statement of Operations. The Fund generally values its interest rate swap contracts based on dealer quotations, if available, or by discounting the future cash flows from the stated terms of the interest rate swap agreement by using interest rates currently available in the market. See Note 8 Derivative Financial Instruments.

Option contracts. The Fund is also exposed to financial market risks including changes in the valuations of its investment portfolio. The Fund may purchase or write (sell) call options. A call option on a security is a contract that gives the holder of the option, in return for a premium, the right to buy from the writer of the option the security underlying the option at a specified exercise price at any time during the term of the option.

The Fund would realize a gain on a purchased call option if, during the option period, the value of such securities exceeded the sum of the exercise price, the premium paid and transaction costs; otherwise the Fund would realize either no gain or a loss on the purchased call option. The Fund may also purchase put option contracts. If a purchased put option is exercised, the premium paid increases the cost basis of the securities sold by the Fund.

The Fund may also write (sell) call options with the purpose of generating realized gains or reducing its ownership of certain securities. If the Fund writes a call option on a security, the Fund has the obligation upon exercise of the option to deliver the underlying security upon payment of the exercise price. The Fund will only write call options on securities that the Fund holds in its portfolio (*i.e.*, covered calls).

When the Fund writes a call option, an amount equal to the premium received by the Fund is recorded as a liability and is subsequently adjusted to the current fair value of the option written. Premiums received from writing options that expire unexercised are treated by the Fund on the expiration date as realized gains from investments. If the Fund repurchases a written call option prior to its exercise, the difference between the premium received and the amount paid to repurchase the option is treated as a realized gain or loss. If a call option is exercised, the premium is added to the proceeds from the sale of the underlying security in determining whether the Fund has realized a gain or loss. The Fund, as the writer of an option, bears the market risk of an unfavorable change in the price of the security underlying the written option. See Note 8 Derivative Financial Instruments.

F. Security Transactions Security transactions are accounted for on the date the securities are purchased or sold (trade date). Realized gains and losses are calculated using the specific identification cost basis method for GAAP purposes. For tax purposes, the Fund utilizes the average cost method to compute the adjusted tax cost basis of its MLP securities.

G. Return of Capital Estimates Dividends and distributions received from the Fund's investments are comprised of income and return of capital. Payments made by MLPs (and other entities treated as partnerships for federal income tax purposes) are categorized as distributions and payments made by corporations are categorized as dividends. At the time such dividends and distributions are received, the Fund estimates the amount of such payments that is considered investment income and the amount that is considered a return of capital. The Fund estimates that 94% of distributions received from its MLP investments were return of capital distributions. This estimate is adjusted to actual in the subsequent fiscal year when tax reporting information related to the Fund's MLP investments is received. Such estimates for MLPs and other investments are based on

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(amounts in 000 s, except number of option contracts, share and per share amounts)

historical information available from each investment and other industry sources. These return of capital estimates do not include any changes that may result from the Tax Cuts and Jobs Act. See Note 14 Subsequent Events.

The return of capital portion of the distributions is a reduction to investment income that results in an equivalent reduction in the cost basis of the associated investments and increases net realized gains (losses) and net change in unrealized gains (losses). If the distributions received by the Fund exceed its cost basis (*i.e.* its cost basis has been reduced to zero), the distributions are treated as realized gains.

The Fund includes all distributions received on its Statement of Operations and reduces its investment income by (i) the estimated return of capital and (ii) the distributions in excess of cost basis, if any. For the fiscal year ended November 30, 2017, the Fund estimated \$19,551 of return of capital and there were no distributions that were in excess of cost basis.

In accordance with GAAP, the return of capital cost basis reductions for the Fund's MLP investments are limited to the total amount of the cash distributions received from such investments. For income tax purposes, the cost basis reductions for the Fund's MLP investments typically exceed cash distributions received from such investments due to allocated losses from these investments.

The following table sets forth the Fund's estimated return of capital portion of the distributions received from its investments.

| | For the Fiscal Year Ended November 30, 2017 |
|--|--|
| Dividends from investments | \$ 18,143 |
| Distributions from investments | 11,428 |
| Total dividends and distributions from investments (before foreign taxes withheld of \$144) | \$ 29,571 |
| Dividends % return of capital | 49% |
| Distributions % return of capital | 93% |
| Total dividends and distributions % return of capital | 66% |
| Return of capital attributable to net realized gains (losses) | \$ 2,460 |
| Return of capital attributable to net change in unrealized gains (losses) | 17,091 |
| Total return of capital | \$ 19,551 |

For the fiscal year ended November 30, 2017, the Fund estimated the return of capital portion of dividends and distributions received to be \$18,692 (63%). This amount was increased by \$859 due to 2016 tax reporting information received by the Fund in fiscal 2017. As a result, the return of capital percentage for the fiscal year ended November 30, 2017 was 66%.

H. *Investment Income* The Fund records dividends and distributions on the ex-dividend date. Interest income is recognized on the accrual basis, including amortization of premiums and accretion of discounts. When investing in securities with payment in-kind interest, the Fund will accrue interest income during the life of the security even though it will not be receiving cash as the interest is accrued. To the extent that interest income to be received is not expected to be realized, a reserve against income is established.

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(amounts in 000 s, except number of option contracts, share and per share amounts)

Many of the debt securities that the Fund holds were purchased at a discount or premium to the par value of the security. The non-cash accretion of a discount to par value increases interest income while the non-cash amortization of a premium to par value decreases interest income. The accretion of a discount and amortization of a premium are based on the effective interest method. The amount of these non-cash adjustments can be found in the Fund's Statement of Cash Flows. The non-cash accretion of a discount increases the cost basis of the debt security, which results in an offsetting unrealized loss. The non-cash amortization of a premium decreases the cost basis of the debt security, which results in an offsetting unrealized gain. To the extent that par value is not expected to be realized, the Fund discontinues accruing the non-cash accretion of the discount to par value of the debt security.

The Fund may receive paid-in-kind and non-cash dividends and distributions in the form of additional units or shares from its investments. For paid-in-kind dividends, the additional units are not reflected in investment income during the period received, but are recorded as unrealized gains upon receipt. Non-cash distributions are reflected in investment income because the Fund has the option to receive its distribution in cash or in additional shares or units of the security. During the fiscal year ended November 30, 2017, the Fund received \$2,960 of paid-in-kind dividends from its investment in Enbridge Energy Management, L.L.C. and \$546 of non-cash distributions from its investment in Enterprise Products Partners L.P.

I. Distributions to Stockholders Distributions to common stockholders are recorded on the ex-dividend date. Distributions to holders of MRP Shares are accrued on a daily basis as described in Note 12 Preferred Stock. As required by the Distinguishing Liabilities from Equity topic of the FASB Accounting Standards Codification (ASC 480), the Fund includes the accrued distributions on its MRP Shares as an operating expense due to the fixed term of this obligation. For tax purposes the payments made to the holders of the Fund's MRP Shares are treated as dividends or distributions.

The characterization of the distributions paid to holders of MRP Shares and common stock as either dividend income (eligible to be treated as qualified dividend income) or distributions (long-term capital gains or return of capital) is determined after the end of the fiscal year based on the Fund's actual earnings and profits and, therefore, the characterization may differ from preliminary estimates.

J. Partnership Accounting Policy The Fund records its pro-rata share of the income (loss) to the extent of distributions it has received, allocated from the underlying partnerships and adjusts the cost basis of the underlying partnerships accordingly. These amounts are included in the Fund's Statement of Operations.

K. Taxes It is the Fund's intention to continue to be treated as and to qualify each year for special tax treatment afforded a regulated investment company (RIC) under Subchapter M of the Internal Revenue Code of 1986, as amended (the Code). As long as the Fund meets certain requirements that govern its sources of income, diversification of assets and timely distribution of earnings to stockholders, the Fund will not be subject to U.S. federal income tax.

The Fund must pay distributions equal to 90% of its investment company taxable income (ordinary income and short-term capital gains) to qualify as a RIC and it must distribute all of its taxable income (ordinary income, short-term capital gains and long-term capital gains) to avoid federal income taxes. The Fund will be subject to federal income tax on any undistributed portion of income. For purposes of the distribution test, the Fund may elect to treat as paid on the last day of its taxable year all or part of any distributions that are declared after the end of its taxable year if such distributions are declared before the due date of its tax return, including any extensions (August 15th). See Note 6 Taxes.

All RICs are subject to a non-deductible 4% excise tax on income that is not distributed on a timely basis in accordance with the calendar year distribution requirements. To avoid the tax, the Fund must distribute during each calendar year an amount at least equal to the sum of (i) 98% of its ordinary income for the calendar year, (ii) 98.2% of its net capital gains for the one-year period ending on November 30, the last day of our taxable year, and (iii) undistributed amounts from previous years on which the Fund paid no U.S. federal income tax. A

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

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distribution will be treated as paid during the calendar year if it is paid during the calendar year or declared by the Fund in October, November or December, payable to stockholders of record on a date during such months and paid by the Fund during January of the following year. Any such distributions paid during January of the following year will be deemed to be received by stockholders on December 31 of the year the distributions are declared, rather than when the distributions are actually received.

The Fund will be liable for the excise tax on the amount by which it does not meet the distribution requirement and will accrue an excise tax liability at the time that the liability is estimable and probable.

Dividend income received by the Fund from sources within Canada is subject to a 15% foreign withholding tax. Interest income on Canadian corporate debt obligations should generally be exempt from withholding tax on interest, with a few exceptions (e.g., a profit participating debt interest).

The Accounting for Uncertainty in Income Taxes Topic of the FASB Accounting Standards Codification (ASC 740) defines the threshold for recognizing the benefits of tax-return positions in the financial statements as *more-likely-than-not* to be sustained by the taxing authority and requires measurement of a tax position meeting the *more-likely-than-not* criterion, based on the largest benefit that is more than 50% likely to be realized.

The Fund utilizes the average cost method to compute the adjusted tax cost basis of its MLP securities.

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. Tax years subsequent to fiscal year 2013 remain open and subject to examination by federal and state tax authorities. See Note 14 Subsequent Events.

L. Foreign Currency Translations The books and records of the Fund are maintained in U.S. dollars. Foreign currency amounts are translated into U.S. dollars on the following basis: (i) market value of investment securities, assets and liabilities at the rate of exchange as of the valuation date; and (ii) purchases and sales of investment securities, income and expenses at the relevant rates of exchange prevailing on the respective dates of such transactions.

The Fund does not isolate that portion of gains and losses on investments in equity and debt securities which is due to changes in the foreign exchange rates from that which is due to changes in market prices of equity and debt securities. Accordingly, realized and unrealized foreign currency gains and losses with respect to such securities are included in the reported net realized and unrealized gains and losses on investment transactions balances.

Net realized foreign exchange gains or losses represent gains and losses from transactions in foreign currencies and foreign currency contracts, foreign exchange gains or losses realized between the trade date and settlement date on security transactions, and the difference between the amounts of interest and dividends recorded on the Fund's books and the U.S. dollar equivalent of such amounts on the payment date.

Net unrealized foreign exchange gains or losses represent the difference between the cost of assets and liabilities (other than investments) recorded on the Fund's books from the value of the assets and liabilities (other than investments) on the valuation date.

M. 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. In addition, in the normal course of business, the Fund enters into contracts that provide general indemnification 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 that have not yet occurred, and may not occur. However, the Fund has not had prior claims or losses pursuant to these contracts and expects the risk of loss to be remote.

N. *Offering and Debt Issuance Costs* Offering costs incurred by the Fund related to the issuance of its common stock reduce additional paid-in-capital when the stock is issued. Costs incurred by the Fund related to

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the issuance of its debt (revolving credit facility, term loan or notes) or its preferred stock are capitalized and amortized over the period the debt or preferred stock is outstanding.

In April 2015, the FASB issued Accounting Standards Update (ASU) No. 2015-03 Interest Imputation of Interest (Subtopic 835-30), Simplifying the Presentation of Debt Issuance Costs . ASU No. 2015-03 requires that all costs incurred to issue debt be presented in the balance sheet as a direct deduction from the carrying value of the debt. In August 2015, the FASB issued ASU No. 2015-15 Interest Imputation of Interest (Subtopic 835-30), Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements . ASU No. 2015-15 states that the SEC staff will not object to an entity presenting the cost of securing a revolving line of credit as an asset, regardless of whether a balance is outstanding. In the first quarter of fiscal 2017, the Fund adopted ASU No. 2015-03 and ASU No. 2015-15 and has classified the costs incurred to issue Notes and MRP Shares as a deduction from the carrying value of Notes and MRP Shares on the Statement of Assets and Liabilities. Previously, these issuance costs were capitalized as an asset on the Statement of Assets and Liabilities. Additionally, the Fund has updated its disclosure in Notes 11 and 12 related to the unamortized Note and MRP Share issuance costs. For the purpose of calculating the Fund s asset coverage ratios pursuant to the 1940 Act, deferred issuance costs are not deducted from the carrying value of Notes and MRP Shares. There was no financial reporting impact to information presented for prior periods as a result of this accounting standard update.

3. Fair Value

The Fair Value Measurement Topic of the FASB Accounting Standards Codification (ASC 820) defines fair value as the price at which an orderly transaction to sell an asset or to transfer a liability would take place between market participants under current market conditions at the measurement date. As required by ASC 820, the Fund has performed an analysis of all assets and liabilities measured at fair value to determine the significance and character of all inputs to their fair value determination. Inputs are the assumptions, along with considerations of risk, that a market participant would use to value an asset or a liability. In general, observable inputs are based on market data that is readily available, regularly distributed and verifiable that the Fund obtains from independent, third-party sources. Unobservable inputs are developed by the Fund based on its own assumptions of how market participants would value an asset or a liability.

The fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value into the following three broad categories.

Level 1 Valuations based on quoted unadjusted prices for identical instruments in active markets traded on a national exchange to which the Fund has access at the date of measurement.

Level 2 Valuations based on quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs and significant value drivers are observable in active markets. Level 2 inputs are those in markets for which there are few transactions, the prices are not current, little public information exists or instances where prices vary substantially over time or among brokered market makers.

Level 3 Model derived valuations in which one or more significant inputs or significant value drivers are unobservable. Unobservable inputs are those inputs that reflect the Fund s own assumptions that market participants would use to price the asset or liability based on the best available information.

The following table presents the Fund s assets measured at fair value on a recurring basis at November 30, 2017, and the Fund presents these assets by security type and description on its Schedule of Investments. Note that the valuation levels below are not necessarily an indication of the risk or liquidity associated with the underlying investment.

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| | Total | Quoted Prices in Active Markets (Level 1) | Prices with Other Observable Inputs (Level 2) | Unobservable Inputs (Level 3) |
|-----------------------------------|-------------------|--|---|-------------------------------------|
| Assets at Fair Value | | | | |
| Equity investments | \$ 392,996 | \$ 374,046 | \$ 14,198 ⁽¹⁾ | \$ 4,752 |
| Debt investments | 41,155 | | 41,155 | |
| Short-term investments | 31 | 31 | | |
| Total assets at fair value | \$ 434,182 | \$ 374,077 | \$ 55,353 | \$ 4,752 |

(1) The Fund's investment in Plains AAP, L.P. (PAGP-AAP) is exchangeable on a one-for-one basis into either Plains GP Holdings, L.P. (PAGP) shares or Plains All American Pipeline, L.P. (PAA) units at the Fund's option. The Fund values its PAGP-AAP investment on an as-exchanged basis based on the higher public market value of either PAGP or PAA. As of November 30, 2017, the Fund's PAGP-AAP investment is valued at PAGP's closing price. The Fund categorizes its investment as a Level 2 security for fair value reporting purposes. The Fund did not have any liabilities that were measured at fair value on a recurring basis using significant unobservable inputs (Level 3) at November 30, 2017. For the fiscal year ended November 30, 2017, there were no transfers between Level 1 and Level 2.

As of November 30, 2017, the Fund had Notes outstanding with aggregate principal amount of \$91,000 and 1,400,000 shares of MRP Shares outstanding with a total liquidation value of \$35,000. The Notes and MRP Shares were issued in private placements to institutional investors and are not listed on any exchange or automated quotation system. See Note 11 Notes and Note 12 Preferred Stock. As a result, the Fund categorizes the Notes and MRP Shares as Level 3 securities and determines the fair value of these instruments based on estimated market yields and credit spreads for comparable instruments with similar maturity, terms and structure.

The Fund records the Notes and MRP Shares on its Statement of Assets and Liabilities at principal amount or liquidation value. As of November 30, 2017, the estimated fair values of these leverage instruments are as follows.

| Security | Principal Amount/ Liquidation Value | Fair Value |
|------------|---|---------------|
| Notes | \$ 91,000 | \$ 92,700 |
| MRP Shares | \$ 35,000 | \$ 35,200 |

The following table presents the Fund's assets measured at fair value on a recurring basis using significant unobservable inputs (Level 3) for the fiscal year ended November 30, 2017.

| | Equity | Debt | Total |
|--------------------------------|----------|-------|----------|
| Balance November 30, 2016 | \$ 4,194 | \$ 34 | \$ 4,228 |
| Purchases | | | |
| Transfers out to Level 1 and 2 | | | |

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| | | | |
|--------------------------------|-----|------|------|
| Realized gains (losses) | | (29) | (29) |
| Unrealized gains (losses), net | 558 | (5) | 553 |

Balance November 30, 2017 \$ 4,752 \$ 4,752

The realized loss of \$29 relates to the Fund's investment in Pardus Oil & Gas LLC (Pardus) that was written-off following the reorganization in the fourth quarter of 2017.

Of the \$553 of net unrealized gains presented above, \$5 results from the reversal of an unrealized gain associated with the write-off of Pardus (now a realized loss). The remaining unrealized gain of \$558 relates to an

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investment that is still held at November 30, 2017, and the Fund includes these unrealized gains (losses) on the Statement of Operations Net Change in Unrealized Gains (Losses).

Valuation Techniques and Unobservable Inputs

Unless otherwise determined by the Board of Directors, the Fund values its private investments in public equity (PIPE) investments that are convertible into or otherwise will become publicly-tradeable (e.g., through subsequent registration or expiration of a restriction on trading) based on the market value of the publicly-traded security less a discount. This discount is initially equal to the discount negotiated at the time the Fund agrees to a purchase price. To the extent that such securities are convertible or otherwise become publicly traded within a time frame that may be reasonably determined, this discount will be amortized on a straight line basis over such estimated time frame.

The Fund owns Class B Units of Capital Product Partners L.P. (CPLP). The Class B Units are convertible on a one-for-one basis into common units and are senior to the underlying common units in terms of liquidation preference and priority of distributions. The Fund's Board of Directors has determined that it is appropriate to value the Class B Units using a convertible pricing model. This model takes into account the attributes of the Class B Units, including the preferred dividend, conversion ratio and call features, to determine the estimated value of such units. In using this model, the Fund estimates (i) the credit spread for CPLP's Class B Units, which is based on credit spreads for comparable companies for CPLP and (ii) the expected volatility for CPLP's common units, which is based on CPLP's historical volatility. The Fund applies a discount to the value derived from the convertible pricing model to account for an expected discount in market prices for CPLP's convertible securities relative to the values calculated using the pricing model. If this resulting price per Class B Unit is less than the public market price for CPLP's common units at such time, the public market price for CPLP's common unit will be used for the Class B Units.

Due to the inherent uncertainty of determining the fair value of investments that do not have a readily available market value, the fair value of the Fund's investments may fluctuate from period to period. Additionally, the fair value of the Fund's investments may differ from the values that would have been used had a ready market existed for such investments and may differ materially from the values that the Fund may ultimately realize.

The following table summarizes the significant unobservable inputs that the Fund used to value its portfolio investments categorized as Level 3 as of November 30, 2017:

Quantitative Table for Valuation Techniques

| Assets at Fair Value | Fair Value | Valuation Technique | Unobservable Inputs | Range | | |
|------------------------------------|------------|-----------------------------|------------------------------|-------|-------|---------|
| | | | | Low | High | Average |
| CPLP valued based on pricing model | \$ 4,752 | - Convertible pricing model | - Credit spread | 6.3% | 6.8% | 6.5% |
| | | | - Volatility | 35.0% | 40.0% | 37.5% |
| | | | - Discount for marketability | 10.0% | 10.0% | 10.0% |

4. Concentration of Risk

The Fund's investments are concentrated in the energy sector. The focus of the Fund's portfolio within the energy sector may present more risks than if the Fund's portfolio were broadly diversified across 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 focus on the energy sector. The performance of securities in the energy sector may lag the performance of other industries or the broader market as a whole. Additionally, to the extent that the Fund invests a relatively high percentage of its assets in the securities of a limited number of issuers, the Fund

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may be more susceptible than a more widely diversified investment company to any single economic, political or regulatory occurrence. At November 30, 2017, the Fund had the following investment concentrations:

| Category | Percent of Long-Term Investments |
|---|----------------------------------|
| Securities of Energy Companies ⁽¹⁾ | 100.0% |
| Equity securities | 90.5% |
| Debt securities | 9.5% |
| Securities of MLPs ⁽¹⁾ | 24.6% |
| Largest single issuer | 7.8% |
| Restricted securities | 10.5% |

(1) Refer to the Glossary of Key Terms for the definitions of Energy Companies and MLPs.

5. Agreements and Affiliations

A. Administration Agreement The Fund has an administration and accounting agreement with Ultimus Fund Solutions, LLC (Ultimus) that may be amended from time to time. Pursuant to the agreement, Ultimus will provide certain administrative and accounting services for the Fund. The agreement has automatic one-year renewals unless earlier terminated by either party as provided under the terms of the agreement.

B. Investment Management Agreement The Fund has entered into an investment management agreement with KA Fund Advisors, LLC (Kafa) under which Kafa, subject to the overall supervision of the Fund's Board of Directors, manages the day-to-day operations of, and provides investment advisory services to, the Fund. On March 30, 2017, the Fund renewed its investment management agreement with Kafa for a period of one year. The investment management agreement will expire on March 31, 2018 and may be renewed annually thereafter upon approval of the Fund's Board of Directors (including a majority of the Fund's directors who are not interested persons of the Fund, as such term is defined in the 1940 Act). For providing these services, Kafa receives an investment management fee from the Fund. For the fiscal year ended November 30, 2017, the Fund paid management fees at an annual rate of 1.25% of the average monthly total assets of the Fund.

For purposes of calculating the management fee, the average total assets for each monthly period are determined by averaging the total assets at the last business day of that month with the total assets at the last business day of the prior month. The total assets of the Fund shall be equal to its average monthly gross asset value (which includes assets attributable to the Fund's use of debt and preferred stock), minus the sum of the Fund's accrued and unpaid dividends and distributions on any outstanding common stock and accrued and unpaid dividends and distributions on any outstanding preferred stock and accrued liabilities (other than liabilities associated with borrowing or leverage by the Fund). Liabilities associated with borrowing or leverage include the principal amount of any debt issued by the Fund, the liquidation preference of any outstanding preferred stock, and other liabilities from other forms of borrowing or leverage such as short positions and put or call options held or written by the Fund.

C. Portfolio Companies From time to time, the Fund may control or may be an affiliate of one or more of its portfolio companies, as each of these terms is defined in the 1940 Act. In general, under the 1940 Act, the Fund would be presumed to control a portfolio company if the Fund and its affiliates owned 25% or more of its outstanding voting securities and would be an affiliate of a portfolio company if the Fund and its affiliates owned 5% or more of its outstanding voting securities. The 1940 Act contains prohibitions and restrictions relating to transactions between investment companies and their affiliates (including the Fund's investment adviser), principal underwriters and affiliates of those affiliates or underwriters.

The Fund believes that there are several factors that determine whether or not a security should be considered a voting security in complex structures such as limited partnerships of the kind in which the Fund

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invests. The Fund also notes that the Securities and Exchange Commission (the SEC) staff has issued guidance on the circumstances under which it would consider a limited partnership interest to constitute a voting security. Under most partnership agreements, the management of the partnership is vested in the general partner, and the limited partners, individually or collectively, have no rights to manage or influence management of the partnership through such activities as participating in the selection of the managers or the board of the limited partnership or the general partner. As a result, the Fund believes that many of the limited partnership interests in which it invests should not be considered voting securities. However, it is possible that the SEC staff may consider the limited partner interests the Fund holds in certain limited partnerships to be voting securities. If such a determination were made, the Fund may be regarded as a person affiliated with and controlling the issuer(s) of those securities for purposes of Section 17 of the 1940 Act.

In making such a determination as to whether to treat any class of limited partnership interests the Fund holds as a voting security, the Fund considers, among other factors, whether or not the holders of such limited partnership interests have the right to elect the board of directors of the limited partnership or the general partner. If the holders of such limited partnership interests do not have the right to elect the board of directors, the Fund generally has not treated such security as a voting security. In other circumstances, based on the facts and circumstances of those partnership agreements, including the right to elect the directors of the general partner, the Fund has treated those securities as voting securities. If the Fund does not consider the security to be a voting security, it will not consider such partnership to be an affiliate unless the Fund and its affiliates own more than 25% of the outstanding securities of such partnership. Additionally, certain partnership agreements give common unitholders the right to elect the partnership's board of directors, but limit the amount of voting securities any limited partner can hold to no more than 4.9% of the partnership's outstanding voting securities (*i.e.*, any amounts held in excess of such limit by a limited partner do not have voting rights). In such instances, the Fund does not consider itself to be an affiliate if it owns more than 5% of such partnership's common units.

There is no assurance that the SEC staff will not consider that other limited partnership securities that the Fund owns and does not treat as voting securities are, in fact, voting securities for the purposes of Section 17 of the 1940 Act. If such determination were made, the Fund will be required to abide by the restrictions on control or affiliate transactions as proscribed in the 1940 Act. The Fund or any portfolio company that it controls, and its affiliates, may from time to time engage in certain of such joint transactions, purchases, sales and loans in reliance upon and in compliance with the conditions of certain exemptive rules promulgated by the SEC. The Fund cannot make assurances, however, that it would be able to satisfy the conditions of these rules with respect to any particular eligible transaction, or even if the Fund were allowed to engage in such a transaction, that the terms would be more or as favorable to the Fund or any company that it controls as those that could be obtained in an arm's length transaction. As a result of these prohibitions, restrictions may be imposed on the size of positions that may be taken for the Fund or on the type of investments that it could make.

Plains AAP, L.P., and Plains GP Holdings, L.P. Robert V. Sinnott is Co-Chairman of Kayne Anderson Capital Advisors, L.P. (KACALP), the managing member of KAFA. Mr. Sinnott also serves as a director of PAA GP Holdings LLC, which is the general partner of Plains GP Holdings, L.P. (PAGP). Members of senior management of KACALP and KAFA and various affiliated funds managed by KACALP own PAGP shares, PAA units and interests in Plains AAP, L.P. (PAGP-AAP). The Fund believes that it is an affiliate of PAGP and PAGP-AAP under the 1940 Act by virtue of (i) the Fund's and other affiliated Kayne Anderson funds' ownership interest in PAGP and PAGP-AAP and (ii) Mr. Sinnott's participation on the board of PAA GP Holdings LLC.

California Resources Corporation Mr. Sinnott serves as a director of California Resources Corporation (CRC). The Fund's investment in CRC is not a voting security, and as such, the Fund does not believe that it is an affiliate of CRC. Despite Mr. Sinnott's participation on the board of CRC, the Fund does not believe that it is an affiliate of CRC because the Fund's and other Kayne Anderson funds' aggregate ownership does not meet the criteria described above, and because the Fund's investment in CRC is not a voting security.

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ONEOK, Inc. and ONEOK Partners, L.P. Kevin S. McCarthy, the Chief Executive Officer of the Fund, served as a director of ONEOK, Inc. (OKE) from December 2015 through May 1, 2017. Effective May 2, 2017, Mr. McCarthy resigned as a director of OKE. OKE is the general partner of ONEOK Partners, L.P. (OKS). Despite Mr. McCarthy's participation on the board of OKE during a portion of the fiscal year ended November 30, 2017, the Fund does not believe that it is an affiliate of OKE or OKS because the Fund's and other Kayne Anderson funds aggregate ownership of each entity does not meet the criteria described above.

The following table summarizes the Fund's investments in affiliates as of and for the year ended November 30, 2017:

| Investment ⁽¹⁾ | No. of Shares/Units ⁽²⁾ (in 000 s) | Value | Dividends/ Distributions Received | Net Change in Unrealized Gains (Losses) |
|---|---|-----------|---|---|
| Plains GP Holdings, L.P. | 703 | \$ 14,465 | \$ 1,330 | \$ (8,632) |
| Plains GP Holdings, L.P. Plains AAP, L.P. | 690 | 14,198 | 1,345 | (8,492) |
| Total | | \$ 28,663 | \$ 2,675 | \$ (17,124) |

(1) See Schedule of Investments for investment classification.

(2) During the fiscal year ended November 30, 2017, the Fund purchased 36 units of PAGP and there were no sales of PAGP or PAGP-AAP during the period.

6. Taxes

It is the Fund's intention to continue to be treated as and to qualify as a RIC under Subchapter M of the Code and distribute all of its taxable income. Accordingly, no provision for federal income taxes is required in the financial statements. See Note 2 Significant Accounting Policies.

Income and capital gain distributions made by RICs often differ from GAAP basis net investment income (loss) and net realized gains (losses). For the Fund, the principal reason for these differences is the return of capital treatment of dividends and distributions from MLPs and certain other of its investments. Net investment income and net realized gains for GAAP purposes may differ from taxable income for federal income tax purposes.

As of November 30, 2017, the principal temporary differences between income for GAAP purposes and taxable income were (a) realized losses that were recognized for GAAP purposes, but disallowed for tax purposes due to wash sale rules; (b) disallowed partnership losses related to the Fund's MLP investments; and (c) other basis adjustments in the Fund's MLPs and other investments.

During the fiscal year ended November 30, 2017, the Fund reclassified \$5,134 from paid in capital to accumulated net investment income primarily due to distributions in excess of taxable income and the permanent differences between GAAP and tax treatment of the amortization of offering costs for MRP Shares. The Fund also reclassified \$2,315 of accumulated net investment income to accumulated realized gains due to permanent differences between GAAP and tax treatment of certain net realized gains.

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The tax basis of the components of distributable earnings can differ from the amounts reflected in the Statement of Assets and Liabilities due to temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. At November 30, 2017, the Fund did not have any undistributed ordinary income or long-term capital gains. The following table sets forth the components of accumulated income or deficit for the Fund.

| | As of November 30, 2017 |
|---|--|
| Capital loss carryforward | \$ (116,986) |
| Unrealized depreciation of investments | (15,934) |
| Total accumulated income (deficit) | \$ (132,920) |

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For the fiscal year ended November 30, 2017, the tax character of the total \$28,645 distributions paid to common stockholders was \$609 of dividend income and \$28,036 of return of capital. The tax character of the total \$1,421 distributions paid to holders of MRP shares was dividend income.

For the fiscal year ended November 30, 2016, the tax character of the total \$32,915 distributions paid to common stockholders was dividend income. The tax character of the total \$2,441 distributions paid to holders of MRP Shares was \$2,141 of dividend income and \$300 of return of capital.

For purposes of determining the tax character of the dividends/distributions to investors, the amounts in excess of the Fund's earnings and profits for federal income tax purposes are treated as a return of capital. Earnings and profits differ from taxable income due principally to adjustments related to the Fund's investments in MLPs.

Under the Regulated Investment Company Modernization Act of 2010, any net capital losses recognized after December 31, 2010 may be carried forward indefinitely, and their character is retained as short-term and/or long-term losses.

The Fund utilizes the average cost method to compute the adjusted tax cost basis of its MLP securities.

At November 30, 2017, the cost basis of investments for federal income tax purposes was \$450,110. At November 30, 2017, gross unrealized appreciation and depreciation of investments and options, if any, for federal income tax purposes were as follows:

| | |
|---|-------------|
| Gross unrealized appreciation of investments (including options, if any) | \$ 44,272 |
| Gross unrealized depreciation of investments (including options, if any) | (60,201) |
| Net unrealized depreciation of investments before foreign currency related translations | (15,929) |
| Unrealized depreciation on foreign currency related translations | (5) |
| Net unrealized depreciation of investments | \$ (15,934) |

7. Restricted Securities

From time to time, the Fund's ability to sell certain of its investments is subject to certain legal or contractual restrictions. For instance, private investments that are not registered under the Securities Act of 1933, as amended (the Securities Act), cannot be offered for public sale in a non-exempt transaction without first being registered. In other cases, certain of the Fund's investments have restrictions such as lock-up agreements that preclude the Fund from offering these securities for public sale.

At November 30, 2017, the Fund held the following restricted investments:

| Investment | Acquisition Date | Type of Restriction | Number of Units, Principal (\$) (in 000s) | Cost Basis (GAAP) | Fair Value | Fair Value Per Unit | Percent of Net Assets | Percent of Total Assets |
|------------|------------------|---------------------|---|-------------------|------------|---------------------|-----------------------|-------------------------|
|------------|------------------|---------------------|---|-------------------|------------|---------------------|-----------------------|-------------------------|

Level 2 Investments

Equity Investments

| | | | | | | | | |
|--|-----|-----|-----|----------|-----------|----------|------|------|
| Plains GP Holdings, L.P. Plains AAP, L.P. ⁽¹⁾ | (2) | (3) | 690 | \$ 3,646 | \$ 14,198 | \$ 20.59 | 4.6% | 3.2% |
|--|-----|-----|-----|----------|-----------|----------|------|------|

Senior Notes⁽⁴⁾

| | | | | | | | | |
|----------------------------------|---------|-----|--------|-------|-------|-----|-----|-----|
| Athabasca Oil Corporation | (2) | (5) | 6,000 | 5,764 | 5,850 | n/a | 1.9 | 1.3 |
| California Resources Corporation | (2) | (5) | 12,925 | 9,272 | 9,613 | n/a | 3.1 | 2.2 |
| Jupiter Resources, Inc. | (2) | (6) | 11,480 | 9,456 | 7,945 | n/a | 2.5 | 1.8 |
| SemGroup Corporation | 9/15/17 | (5) | 3,000 | 2,954 | 3,083 | n/a | 1.0 | 0.7 |

| | | | | | | | | |
|--------------|--|--|--|-----------|-----------|--|-------|------|
| Total | | | | \$ 31,092 | \$ 40,689 | | 13.1% | 9.2% |
|--------------|--|--|--|-----------|-----------|--|-------|------|

Level 3 Investments⁽⁷⁾

Equity Investments

| | | | | | | | | |
|---|-----|-----|-----|----------|----------|------|------|------|
| Capital Product Partners L.P. Class B Units | (2) | (5) | 606 | \$ 3,380 | \$ 4,752 | 7.84 | 1.5% | 1.1% |
|---|-----|-----|-----|----------|----------|------|------|------|

| | | | | | | | | |
|--|--|--|--|-----------|-----------|--|-------|-------|
| Total of all restricted investments | | | | \$ 34,472 | \$ 45,441 | | 14.6% | 10.3% |
|--|--|--|--|-----------|-----------|--|-------|-------|

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- (1) The Fund values its investment in Plains AAP, L.P. (PAGP-AAP) on an as exchanged basis based on the higher public market value of either Plains GP Holdings, L.P. (PAGP) or Plains All American, L.P. (PAA). As of November 30, 2017, the Fund's PAGP-AAP investment is valued at PAGP's closing price. See Note 3 Fair Value.
- (2) Security was acquired at various dates during the fiscal year ended November 30, 2017 and/or in prior fiscal years.
- (3) The Fund's investment in PAGP-AAP is exchangeable on a one-for-one basis into either PAGP shares or PAA units at the Fund's option. Upon exchange, the PAGP shares or PAA units will be freely tradable.
- (4) These securities have a fair market value determined by the mean of the bid and ask prices provided by an agent or a syndicate bank, a principal market maker, an independent pricing service or an independent broker as more fully described in Note 2 Significant Accounting Policies. These securities have limited trading volume and are not listed on a national exchange.
- (5) Unregistered or restricted security of a publicly-traded company.
- (6) Unregistered security of a private company.
- (7) Securities are valued using inputs reflecting the Fund's own assumptions as more fully described in Note 2 Significant Accounting Policies and Note 3 Fair Value.

8. Derivative Financial Instruments

As required by the Derivatives and Hedging Topic of the FASB Accounting Standards Codification (ASC 815), the following are the derivative instruments and hedging activities of the Fund. See Note 2 Significant Accounting Policies.

Option Contracts Transactions in option contracts for the fiscal year ended November 30, 2017 were as follows:

| | Number of Contracts | Premium |
|--|------------------------|---------|
| Call Options Written | | |
| Options outstanding at November 30, 2016 | 1,000 | \$ 93 |

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| | | |
|---|---------|-------|
| Options written | 13,300 | 1,031 |
| Options subsequently repurchased ⁽¹⁾ | (8,950) | (755) |
| Options exercised | (3,650) | (254) |
| Options expired | (1,700) | (115) |
| Options outstanding at November 30, 2017 | | \$ |

(1) The price at which the Fund subsequently repurchased the options was \$146, which resulted in net realized gains of \$609.

Interest Rate Swap Contracts The Fund may enter into interest rate swap contracts to partially hedge itself from increasing expense on its leverage resulting from increasing interest rates. At the time the interest rate swap contracts reach their scheduled termination, there is a risk that the Fund would not be able to obtain a replacement transaction or that the terms of the replacement transaction would not be as favorable as on the expiring transaction. In addition, if the Fund is required to terminate any swap contract early, then the Fund could be required to make a termination payment. As of November 30, 2017, the Fund did not have any interest rate swap contracts outstanding.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****NOTES TO FINANCIAL STATEMENTS**

(amounts in 000 s, except number of option contracts, share and per share amounts)

The following table sets forth the fair value of the Fund's derivative instruments on the Statement of Assets and Liabilities:

The Fund did not have any derivative instruments outstanding as of November 30, 2017. The following table sets forth the effect of the Fund's derivative instruments on the Statement of Operations:

| Derivatives Not Accounted for as Hedging Instruments | Location of Gains/(Losses) on Derivatives Recognized in Income | For the Fiscal Year Ended November 30, 2017 | |
|---|---|--|--|
| | | Net Realized Gains/(Losses) on Derivatives Recognized in Income | Change in Unrealized Gains/(Losses) on Derivatives Recognized in Income |
| Call options written | Options | \$ 724 | \$ 113 |

9. Investment Transactions

For the fiscal year ended November 30, 2017, the Fund purchased and sold securities in the amounts of \$128,722 and \$163,449 (excluding short-term investments and options).

10. Credit Facility and Term Loan

At November 30, 2017, the Fund had a \$75,000 unsecured revolving credit facility (the "Credit Facility") with a syndicate of lenders. The Credit Facility has a two-year term maturing on November 9, 2018. The interest rate on outstanding loan balances may vary between LIBOR plus 1.60% and LIBOR plus 2.25%, depending on the Fund's asset coverage ratios. The Fund pays a fee of 0.30% per annum on any unused amounts of the Credit Facility.

For the fiscal year ended November 30, 2017, the average amount outstanding under the Credit Facility was \$537 with a weighted average interest rate of 2.46%. As of November 30, 2017, the Fund had no outstanding borrowings under the Credit Facility.

At November 30, 2017, the Fund had a \$35,000 unsecured revolving term loan ("Term Loan"). The Term Loan has a five-year commitment maturing on July 25, 2019, and borrowings under the Term Loan accrue interest at a rate of LIBOR plus 1.50%. The Fund pays a fee of 0.25% per annum on any unused amount of the Term Loan. Amounts borrowed under the Term Loan may be repaid and subsequently reborrowed. For the fiscal year ended November 30, 2017, the average amount outstanding under the Term Loan was \$22,247 with a weighted average interest rate of 2.52%. As of November 30, 2017, the Fund had no outstanding borrowings under the Term Loan.

As of November 30, 2017, the Fund was in compliance with all financial and operational covenants required by the Credit Facility and Term Loan. See Financial Highlights for the Fund's asset coverage ratios under the 1940 Act.

Table of Contents**KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.****NOTES TO FINANCIAL STATEMENTS**

(amounts in 000 s, except number of option contracts, share and per share amounts)

11. Notes

At November 30, 2017, the Fund had \$91,000 aggregate principal amount of Notes outstanding. The table below sets forth the key terms of each series of Notes outstanding at November 30, 2017.

| Series | Principal Outstanding | Unamortized Issuance Costs | Estimated Fair Value | Fixed Interest Rate | Maturity |
|--------|-----------------------|----------------------------|----------------------|---------------------|----------|
| C | \$ 21,000 | \$ 77 | \$ 21,800 | 4.00% | 3/22/22 |
| D | 40,000 | 195 | 40,300 | 3.34% | 5/1/23 |
| E | 30,000 | 135 | 30,600 | 3.46% | 7/30/21 |
| | \$ 91,000 | \$ 407 | \$ 92,700 | | |

Holders of the Notes are entitled to receive cash interest payments semi-annually (on September 3 and March 3) at the fixed rate. As of November 30, 2017, the weighted average interest rate on the outstanding Notes was 3.53%.

As of November 30, 2017, each series of Notes was rated AAA by FitchRatings. In the event the credit rating on any series of Notes falls below A-, the interest rate on such series will increase by 1% during the period of time such series is rated below A-. The Fund is required to maintain a current rating from one rating agency with respect to each series of Notes and is prohibited from having any rating of less than investment grade (BBB-) with respect to each series of Notes.

The Notes were issued in private placement offerings to institutional investors and are not listed on any exchange or automated quotation system. The Notes contain various covenants related to other indebtedness, liens and limits on the Fund's overall leverage. Under the 1940 Act and the terms of the Notes, the Fund may not declare dividends or make other distributions on shares of its common stock or make purchases of such shares if, at any time of the declaration, distribution or purchase, asset coverage with respect to senior securities representing indebtedness (including the Notes) would be less than 300%.

The Notes are redeemable in certain circumstances at the option of the Fund. The Notes are also subject to a mandatory redemption to the extent needed to satisfy certain requirements if the Fund fails to meet an asset coverage ratio required by law and is not able to cure the coverage deficiency by the applicable deadline, or fails to cure a deficiency as stated in the Fund's rating agency guidelines in a timely manner.

The Notes are unsecured obligations of the Fund and, upon liquidation, dissolution or winding up of the Fund, will rank: (1) senior to all of the Fund's outstanding preferred shares; (2) senior to all of the Fund's outstanding common shares; (3) on a parity with any unsecured creditors of the Fund and any unsecured senior securities representing indebtedness of the Fund; and (4) junior to any secured creditors of the Fund.

At November 30, 2017, the Fund was in compliance with all covenants under the agreements of the Notes.

12. Preferred Stock

At November 30, 2017, the Fund had 1,400,000 shares of MRP Shares outstanding, with a total liquidation value of \$35,000 (\$25.00 per share). The table below sets forth the key terms of each series of MRP Shares outstanding at November 30, 2017.

| Series | Liquidation Value | Unamortized Issuance Costs | Estimated Fair Value | Rate | Mandatory Redemption Date |
|---------------|--------------------------|-----------------------------------|-----------------------------|-------------|----------------------------------|
| C | \$ 35,000 | \$ 254 | \$ 35,200 | 4.06% | 7/30/21 |

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amounts in 000 s, except number of option contracts, share and per share amounts)

Holders of the MRP Shares are entitled to receive cumulative cash dividend payments on the first business day following each quarterly period (February 28, May 31, August 31 and November 30).

As of November 30, 2017, the Fund's series C MRP Shares were rated **A** by FitchRatings. The dividend rate on the Fund's MRP Shares will increase between 0.5% and 4.0% if the credit rating is downgraded below **A** by FitchRatings. Further, the annual dividend rate for all series of MRP Shares will increase by 4.0% if no ratings are maintained, and the annual dividend rate will increase by 5.0% if the Fund fails to make quarterly dividend or certain other payments. The Fund is required to maintain a current rating from one rating agency with respect to each series of MRP Shares.

The MRP Shares rank senior to all of the Fund's outstanding common shares and on parity with any other preferred stock. The MRP Shares are redeemable in certain circumstances at the option of the Fund and are also subject to a mandatory redemption if the Fund fails to meet a total leverage (debt and preferred stock) asset coverage ratio of 225% or fails to maintain its basic maintenance amount as stated in the Fund's rating agency guidelines.

Under the terms of the MRP Shares, the Fund may not declare dividends or make other distributions on shares of its common stock or make purchases of such shares if, at any time of the declaration, distribution or purchase, asset coverage with respect to total leverage would be less than 225% or the Fund would fail to maintain its basic maintenance amount as stated in the Fund's rating agency guidelines.

The holders of the MRP Shares have one vote per share and will vote together with the holders of common stock as a single class except on matters affecting only the holders of MRP Shares or the holders of common stock. The holders of the MRP Shares, voting separately as a single class, have the right to elect at least two directors of the Fund.

At November 30, 2017, the Fund was in compliance with the asset coverage and basic maintenance requirements of its MRP Shares.

13. Common Stock

At November 30, 2017, the Fund had 198,600,000 shares of common stock authorized and 22,034,170 shares outstanding. As of November 30, 2017, KACALP and KAFA owned 57,740 and 4,000 shares of the Fund, respectively. During the fiscal year ended November 30, 2017, there were no common stock transactions.

14. Subsequent Events

On December 14, 2017, the Fund declared its quarterly distribution of \$0.30 per common share for the fourth quarter. The total distribution of \$6,610 was paid on January 12, 2018. Of this total, pursuant to the Fund's dividend reinvestment plan \$637 was reinvested into the Fund through open market purchases of common stock.

On December 22, 2017, the Tax Cuts and Jobs Act (the **Tax Reform Bill**) was signed into law. Currently, the Fund does not believe the bill will have a material impact on it given its intention to continue to qualify as a regulated investment company (**RIC**), which is generally not subject to U.S. federal income tax. The Tax Reform Bill includes a limitation on the deductibility of net interest expense. To the extent the Fund's deductions are limited in any given year, the Fund will be able to utilize such deductions in future periods if it has sufficient taxable income. Further, the Tax Reform Bill permits immediate expensing of qualified capital expenditures for the next five years, and as a result, the Fund's portfolio companies may pass through more deductions which may result in a higher portion of distributions received to be characterized as return of capital.

The Fund has performed an evaluation of subsequent events through the date the financial statements were issued and has determined that no additional items require recognition or disclosure.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of

Kayne Anderson Midstream/Energy 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 applicable to common stockholders, and of cash flows and the financial highlights present fairly, in all material respects, the financial position of the Kayne Anderson Midstream/Energy Fund, Inc. (the Fund) as of November 30, 2017, the results of its operations and its cash flows for the year then ended, the changes in its net assets applicable to common stockholders for each of the two years in the period then ended and the financial highlights for each of 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, 2017 by correspondence with the custodian and brokers, provide a reasonable basis for our opinion.

/s/PricewaterhouseCoopers LLP

Los Angeles, California

January 29, 2018

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

GLOSSARY OF KEY TERMS

(UNAUDITED)

This glossary contains definitions of certain key terms, as they are used in our investment objective and policies and as described in this report. These definitions may not correspond to standard sector definitions.

Energy Assets means assets that are used in the energy sector, including assets used in exploring, developing, producing, generating, transporting, transmitting, storing, gathering, processing, refining, distributing, mining or marketing of natural gas, natural gas liquids, crude oil, refined products, coal or electricity.

Energy Companies means companies that own and operate Energy Assets or provide energy-related services. For purposes of this definition, this includes companies that (i) derive at least 50% of their revenues or operating income from operating Energy Assets or providing services for the operation of such Energy Assets or (ii) have Energy Assets that represent the majority of their assets.

General Partner MLPs means Master Limited Partnerships whose assets consist of ownership interests of an affiliated Master Limited Partnership (which may include general partnership interests, incentive distribution rights, common units and subordinated units).

Master Limited Partnerships or MLPs means limited partnerships and limited liability companies that are publicly traded and are treated as partnerships for federal income tax purposes, includes Midstream MLPs and other MLPs.

Midstream Assets means assets used in energy logistics, including, but not limited to, assets used in transporting, storing, gathering, processing, distributing, or marketing of natural gas, natural gas liquids, crude oil or refined products.

Midstream Companies means companies that own and operate Midstream Assets and are taxed as corporations for federal income tax purposes, including MLP Affiliates of Midstream MLPs. This includes companies structured like MLPs, but not treated as a publicly-traded partnership for RIC qualification purposes as well as MLP Affiliates of Midstream MLPs. For purposes of this definition, this includes companies that (i) derive at least 50% of their revenue or operating income from operating Midstream Assets or (ii) have Midstream Assets that represent the majority of their assets.

Midstream/Energy Sector consists of (a) Midstream MLPs, (b) Midstream Companies, (c) Other MLPs and (d) Other Energy Companies.

Midstream Sector consists of (a) Midstream MLPs and (b) Midstream Companies.

Midstream MLPs means MLPs that principally own and operate Midstream Assets including General Partner MLPs whose assets consist of ownership interests of an affiliated Midstream MLP.

MLP Affiliates means affiliates of Master Limited Partnerships, substantially all of whose assets consist of i-units or other ownership interests in Master Limited Partnerships. MLP Affiliates are not treated as partnerships for federal income tax purposes.

Other Energy Companies means Energy Companies, excluding MLPs and Midstream Companies.

Other MLPs consists of (a) upstream MLPs, (b) coal MLPs, (c) propane MLPs and (d) MLPs that operate other energy assets or provide energy-related services.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

PRIVACY POLICY NOTICE

(UNAUDITED)

Rev. 01/2011

FACTS

Why?

WHAT DOES KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC. (KMF) DO WITH YOUR PERSONAL INFORMATION?

Financial companies choose how they share your personal information. Federal law gives consumers the right to limit some but not all sharing. Federal law also requires us to tell you how we collect, share, and protect your personal information. Please read this notice carefully to understand what we do.

What?

The types of personal information we collect and share depend on the product or service you have with us. This information can include:

Social Security number and account balances

Payment history and transaction history

Account transactions and wire transfer instructions

When you are *no longer* our customer, we continue to share your information as described in this notice.

How?

All financial companies need to share customers' personal information to run their everyday business. In the section below, we list the reasons financial companies can share their customers' personal information; the reasons KMF chooses to share; and whether you can limit this sharing.

| Reasons we can share your personal information | Does KMF share? | Can you limit this sharing? |
|--|-----------------|-----------------------------|
| For our everyday business purposes such as to process your transactions, maintain your account(s), respond to court orders and legal investigations, or report to credit bureaus | Yes | No |
| For our marketing purposes to offer our products and services to you | No | No |
| For joint marketing with other financial companies | No | We don't share |
| For our affiliates' everyday business purposes information about your transactions and experiences | No | We don't share |
| For our affiliates' everyday business purposes information about your creditworthiness | No | We don't share |

For nonaffiliates to market to you

No

We don't share

Questions?

Call 877-657-3863 or go to <http://www.kaynefunds.com>

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

PRIVACY POLICY NOTICE

(UNAUDITED)

Who we are

Who is providing this notice?

KMF

What we do

How does KMF protect my personal information?

To protect your personal information from unauthorized access and use, we use security measures that comply with federal law. These measures include computer safeguards and secured files and buildings.

How does KMF collect my personal information?

Access to your personal information is on a need-to-know basis. KMF has adopted internal policies to protect your non-public personal information. We collect your personal information, for example, when you

Provide account information

Buy securities from us or make a wire transfer

Give us your contact information

Why can't I limit all sharing?

We also collect your personal information from other companies. Federal law gives you the right to limit only

sharing for affiliates everyday business purposes information about your creditworthiness

affiliates from using your information to market to you

sharing for nonaffiliates to market to you

State laws and individual companies may give you additional rights to limit sharing.

Definitions

Affiliates

Companies related by common ownership or control. They can be financial and nonfinancial companies.

Nonaffiliates

KMF does not share with our affiliates.
Companies not related by common ownership or control. They can be financial and nonfinancial companies.

Joint marketing

KMF does not share with nonaffiliates so they can market to you.
A formal agreement between nonaffiliated financial companies that together market financial products or services to you.

KMF doesn't jointly market.

Other important information

None.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

DIVIDEND REINVESTMENT PLAN

(UNAUDITED)

Kayne Anderson Midstream/Energy Fund, Inc., a Maryland corporation (the **Fund**), has adopted the following plan (the **Plan**) with respect to distributions declared by its Board of Directors (the **Board**) on shares of its Common Stock:

1. Unless a stockholder specifically elects to receive cash as set forth below, all distributions hereafter declared by the Board shall be payable in shares of the Common Stock of the Fund, and no action shall be required on such stockholder's part to receive a distribution in stock.
2. Such distributions shall be payable on such date or dates as may be fixed from time to time by the Board to stockholders of record at the close of business on the record date(s) established by the Board for the distribution involved.
3. The Fund may use newly-issued shares of its Common Stock or purchase shares in the open market in connection with the implementation of the plan. The number of shares to be issued to a stockholder shall be based on share price equal to 95% of the closing price of the Fund's Common Stock one day prior to the dividend payment date.
4. The Board may, in its sole discretion, instruct the Fund to purchase shares of its Common Stock in the open market in connection with the implementation of the Plan as follows: If the Fund's Common Stock is trading below net asset value at the time of valuation, upon notice from the Fund, the Plan Administrator (as defined below) will receive the dividend or distribution in cash and will purchase Common Stock in the open market, on the New York Stock Exchange or elsewhere, for the Participants' accounts, except that the Plan Administrator will endeavor to terminate purchases in the open market and cause the Fund to issue the remaining shares if, following the commencement of the purchases, the market value of the shares, including brokerage commissions, exceeds the net asset value at the time of valuation. These remaining shares will be issued by the Fund at a price equal to the greater of (i) the net asset value at the time of valuation or (ii) 95% of the then current market price.
5. In a case where the Plan Administrator has terminated open market purchases and caused the issuance of remaining shares by the Fund, the number of shares received by the participant in respect of the cash dividend or distribution will be based on the weighted average of prices paid for shares purchased in the open market, including brokerage commissions, and the price at which the Fund issues remaining shares. To the extent that the Plan Administrator is unable to terminate purchases in the open market before the Plan Administrator has completed its purchases, or remaining shares cannot be issued by the Fund because the Fund declared a dividend or distribution payable only in cash, and the market price exceeds the net asset value of the shares, the average share purchase price paid by the Plan Administrator may exceed the net asset value of the shares, resulting in the acquisition of fewer shares than if the dividend or distribution had been paid in shares issued by the Fund.
6. A stockholder may, however, elect to receive his or its distributions in cash. To exercise this option, such stockholder shall notify American Stock Transfer & Trust Company, the plan administrator and the Fund's transfer agent and registrar (collectively the **Plan Administrator**), in writing so that such notice is received by the Plan Administrator no later than the record date fixed by the Board for the distribution involved.
7. The Plan Administrator will set up an account for shares acquired pursuant to the Plan for each stockholder who has not so elected to receive dividends and distributions in cash (each, a **Participant**). The Plan Administrator may hold each Participant's shares, together with the shares of other Participants, in non-certificated form in the Plan Administrator's name or that of its nominee. Upon request by a Participant, received no later than three (3) days prior to the payable date, the Plan Administrator will, instead of crediting shares to and/or carrying shares in a Participant's account, issue, without charge to the Participant, a certificate registered in the Participant's name for the number of whole shares payable to the Participant and a check for any fractional share less a broker commission on the sale of such fractional shares. If a

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

DIVIDEND REINVESTMENT PLAN

(UNAUDITED)

request to terminate a Participant's participation in the Plan is received less than three (3) days before the payable date, dividends and distributions for that payable date will be reinvested. However, subsequent dividends and distributions will be paid to the Participant in cash.

8. The Plan Administrator will confirm to each Participant each acquisition made pursuant to the Plan as soon as practicable but not later than ten (10) business days after the date thereof. Although each Participant may from time to time have an undivided fractional interest (computed to three decimal places) in a share of Common Stock of the Fund, no certificates for a fractional share will be issued. However, dividends and distributions on fractional shares will be credited to each Participant's account. In the event of termination of a Participant's account under the Plan, the Plan Administrator will adjust for any such undivided fractional interest in cash at the market value of the Fund's shares at the time of termination.

9. The Plan Administrator will forward to each Participant any Fund related proxy solicitation materials and each Corporation report or other communication to stockholders, and will vote any shares held by it under the Plan in accordance with the instructions set forth on proxies returned by Participants to the Fund.

10. In the event that the Fund makes available to its stockholders rights to purchase additional shares or other securities, the shares held by the Plan Administrator for each Participant under the Plan will be added to any other shares held by the Participant in certificated form in calculating the number of rights to be issued to the Participant.

11. The Plan Administrator's service fee, if any, and expenses for administering the Plan will be paid for by the Fund.

12. Each Participant may terminate his or its account under the Plan by so notifying the Plan Administrator via the Plan Administrator's website at www.amstock.com, by filling out the transaction request form located at the bottom of the Participant's Statement and sending it to American Stock Transfer and Trust Company, P.O. Box 922, Wall Street Station, New York, NY 10269-0560 or by calling the Plan Administrator at (888) 888-0317. Such termination will be effective immediately. The Plan may be terminated by the Fund upon notice in writing mailed to each Participant at least 30 days prior to any record date for the payment of any dividend or distribution by the Fund. Upon any termination, the Plan Administrator will cause a certificate or certificates to be issued for the full shares held for the Participant under the Plan and a cash adjustment for any fractional share to be delivered to the Participant without charge to the Participant. If a Participant elects by his or its written notice to the Plan Administrator in advance of termination to have the Plan Administrator sell part or all of his or its shares and remit the proceeds to the Participant, the Plan Administrator is authorized to deduct a \$15.00 transaction fee plus a \$0.10 per share brokerage commission from the proceeds.

13. These terms and conditions may be amended or supplemented by the Fund at any time but, except when necessary or appropriate to comply with applicable law or the rules or policies of the Securities and Exchange Commission or any other regulatory authority, only by mailing to each Participant appropriate written notice at least 30 days prior to the effective date thereof. The amendment or supplement shall be deemed to be accepted by each Participant unless, prior to the effective date thereof, the Plan Administrator receives written notice of the termination of his or its account under the Plan. Any such amendment may include an appointment by the Plan Administrator in its place and stead of a successor agent under these terms and conditions, with full power and authority to perform all or any of the acts to be performed by the Plan Administrator under these terms and conditions. Upon any such appointment of any agent for the purpose of receiving dividends and distributions, the Fund will be authorized to pay to such successor agent, for each Participant's account, all dividends and distributions payable on shares of the Fund held in the Participant's name or under the Plan for retention or application by such successor agent as provided in these terms and conditions.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

DIVIDEND REINVESTMENT PLAN

(UNAUDITED)

14. The Plan Administrator will at all times act in good faith and use its best efforts within reasonable limits to ensure its full and timely performance of all services to be performed by it under this Plan and to comply with applicable law, but assumes no responsibility and shall not be liable for loss or damage due to errors unless such error is caused by the Plan Administrator's negligence, bad faith, or willful misconduct or that of its employees or agents.

15. These terms and conditions shall be governed by the laws of the State of Maryland.

Adopted: November 18, 2010

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

INFORMATION CONCERNING DIRECTORS AND CORPORATE OFFICERS

(UNAUDITED)

Independent Directors⁽¹⁾

| Name⁽²⁾ (Year Born) | Position(s) Held with Fund, Term of Office/Time of Service | Principal Occupations During Past Five Years | Other Directorships Held by Director/Officer During Past Five Years |
|---|--|--|---|
| William R. Cordes (born 1948) | Director. 3-year term as Director (until the 2019 Annual Meeting of Stockholders)/served since inception | Retired from Northern Border Pipeline Company in March 2007 after serving as President from October 2000 to March 2007. Chief Executive Officer of Northern Border Partners, L.P. from October 2000 to April 2006. President of Northern Natural Gas Company from 1993 to 2000. President of Transwestern Pipeline Company from 1996 to 2000. | Current: Kayne Anderson Energy Development Company (KED) Boardwalk Pipeline Partners, LP (pipeline MLP) Prior: Northern Border Partners, L.P. (midstream MLP) |
| Barry R. Pearl (born 1949) | Director. 3-year term (until the 2018 Annual Meeting of Stockholders)/served since inception | Management consultant to Northstar Midstream, a private developer and operator of petroleum infrastructure assets since March 2016, Executive Vice President of Kealine, LLC, (and its affiliate WesPac Midstream LLC an energy infrastructure developer), from February 2007 to March 2016. Provided management consulting services from January 2006 to February 2007. President of Texas Eastern Products Pipeline Company, LLC (TEPPCO), (the general partner of TEPPCO Partners, L.P.,) from February 2001 to December 2005. Chief Executive Officer and director of TEPPCO from May 2002 to December 2005; and Chief Operating Officer from February 2001 to May 2002. | Current: KED Magellan Midstream Partners, L.P. (midstream MLP) Prior: Peregrine Midstream Partners LLC (natural gas storage) |

| | | | |
|--------------------------------|--|--|---|
| | | | Seaspan Corporation (containership chartering) |
| | | | Targa Resources Partners LP (midstream MLP) |
| | | | TEPPCO Partners, L.P. (midstream MLP) |
| Albert L. Richey (born 1949) | Director. 3-year term (until the 2019 Annual Meeting of Stockholders)/served since inception | Retired from Anadarko Petroleum Corporation in August 2016 after serving as Senior Vice President Finance and Treasurer from January 2013 to August 2016; Vice President Special Projects from January 2009 to December 2012; Vice President Corporate Development from 2006 to December 2008; Vice President and Treasurer from 1995 to 2005 and Treasurer from 1987 to 1995. | Current: KED |
| | | | Prior: |
| | | | Boys & Girls Clubs of Houston |
| | | | Boy Scouts of America |
| William L. Thacker (born 1945) | Director. 3-year term (until the 2018 Annual Meeting of Stockholders)/served since inception | Chairman of the Board of Directors of Copano Energy, L.L.C. from 2009 to 2013. Retired from the Board of TEPPCO in May 2002 after serving as Chairman from March 1997 to May 2002; Chief Executive Officer from January 1994 to May 2002; and President, Chief Operating Officer and Director from September 1992 to January 1994. | Current: KED |
| | | | Prior: |
| | | | QEP Resources Inc. (oil and gas exploration and production company) |
| | | | Prior: |
| | | | Copano Energy, L.L.C. (midstream MLP) |

GenOn Energy, Inc.
(electricity generation and sales)

Pacific Energy Partners, L.P. (midstream
MLP)

TEPPCO Partners, L.P.
(midstream MLP)

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

INFORMATION CONCERNING DIRECTORS AND CORPORATE OFFICERS

(UNAUDITED)

Interested Director and Non-Director Officers

| Name⁽²⁾ (Year Born) | Position(s) Held with Fund, Term of Office/Time of Service | Principal Occupations During Past Five Years | Other Directorships Held by Director/Officer During Past Five Years |
|---|--|--|---|
| Kevin S. McCarthy ⁽³⁾ (born 1959) | Chairman of the Board of Directors and Chief Executive Officer. 3-year term as a director (until the 2020 Annual Meeting of Stockholders), elected annually as an officer/served since inception | Managing Partner of KACALP since June 2004 and Co-Managing Partner of KAFA since 2006. Chief Executive Officer of Kayne Anderson MLP Investment Company (KYN); Kayne Anderson Energy Total Return Fund, Inc. (KYE); and Kayne Anderson Energy Development Company (KED) since inception (KYN inception in 2004; KYE inception in 2005; and KED inception in 2006). | <p>Current:</p> <p>KYN</p> <p>KYE</p> <p>KED</p> <p>Kayne Anderson Acquisition Corp. (special purpose acquisition company)</p> <p>Range Resource Corporation (oil and gas exploration and production company)</p> <p>Prior:</p> <p>Clearwater Natural Resources, L.P. (coal mining)</p> <p>Direct Fuels Partners, L.P. (transmix refining and fuels distribution)</p> |

| | | | |
|-------------------------------|--|--|---|
| | | | Emerge Energy Services LP (frac sand MLP) |
| | | | International Resource Partners LP (coal mining) |
| | | | K-Sea Transportation Partners LP (shipping MLP) |
| | | | ONEOK, Inc. (midstream company) |
| | | | ProPetro Services, Inc. (oilfield services) |
| J.C. Frey (born 1968) | Executive Vice President, Assistant Treasurer and Assistant Secretary. Elected annually/served since inception | Managing Partner of KACALP since 2004 and Co-Managing Partner of KAFA since 2006. Assistant Secretary and Assistant Treasurer of KYN since 2004; of KYE since 2005, and of KED since 2006. Executive Vice President of KYN, KYE and KED since June 2008. | None |
| James C. Baker (born 1972) | President since June 2016. Executive Vice President from inception to June 2016. Elected annually/served since inception | Senior Managing Director of KACALP and KAFA since February 2008. President of KYN, KYE, and KED since June 2016. Executive Vice President of KYN, KYE and KED from June 2008 to June 2016. | Current: KED |
| | | | Prior: |
| | | | K-Sea Transportation Partners LP (shipping MLP) |
| | | | Petris Technology, Inc. (data management for energy companies) |
| | | | ProPetro Services, Inc. (oilfield services) |
| Terry A. Hart (born 1969) | Chief Financial Officer and Treasurer. Elected annually/served since | Managing Director of KACALP since December 2005 and Chief Financial Officer of KAFA since 2006. Chief Financial Officer and Treasurer of KYN and KYE since December | Current: |

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inception

2005, and KED since September 2006. Chief Financial Officer of Kayne Anderson Acquisition Corp. since December 2016.

KED

The Source for Women
(not-for-profit organization)

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| Name⁽²⁾ (Year Born) | Position(s) Held with Fund, Term of Office/Time of Service | Principal Occupations During Past Five Years | Other Directorships Held by Director/Officer During Past Five Years |
|---|---|---|--|
| Ron M. Logan, Jr. (born 1960) | Senior Vice President Elected annually/served since September 2012 | Senior Managing Director of KACALP and KAFA since February 2014. Managing Director of KACALP and KAFA from September 2006 to February 2014. Senior Vice President of KED since September 2006 and of KYN and KYE since September 2012. | Prior: VantaCore Partners LP (aggregates MLP) |
| Jody C. Meraz (born 1978) | Vice President. Elected annually. Elected annually/served since 2011 | Managing Director of KACALP and KAFA since February 2014. Senior Vice President of KACALP and KAFA from 2011 to February 2014. Vice President of KYN, KYE, and KED since 2011. | None |
| Alan R. Boswell (born 1978) | Vice President. Elected annually/served since 2017 | Managing Director of KACALP and KAFA since January 2018. Senior Vice President of KACALP and KAFA from July 2014 to January 2018. Vice President of KACALP and KAFA from 2012 to July 2014. Vice President of KYN, KYE and KED since 2017. | None |
| Michael O Neil (born 1983) | Chief Compliance Officer. Elected annually/served since 2013 | Chief Compliance Officer of KACALP and KAFA since March 2012 and of KYN, KED, KYE since December 2013 and KA Associates, Inc. (broker-dealer) since January 2013. A Compliance Officer at BlackRock Inc. from January 2008 to February 2012. | None |
| David J. Shladovsky (born 1960) | Secretary. Elected annually/served since inception | General Counsel of KACALP since 1997 and of KAFA since 2006. Secretary and Chief Compliance Officer (through December 2013) of KYN since 2004; of KYE since 2005, and of KED since 2006. | None |

- (1) The 1940 Act requires the term "Fund Complex" to be defined to include registered investment companies advised by KAFA, the Fund's investment advisor, and the Fund Complex includes the Fund, KYN, KYE, and KED. Each Independent Director oversees two registered investment companies in the Fund Complex, the Fund and KED, as noted above.
- (2) The address of each director and corporate officer is c/o KA Fund Advisors, LLC, 811 Main Street, 14th Floor, Houston, Texas, 77002.

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(3) Mr. McCarthy is an interested person of the Fund as defined by the 1940 Act by virtue of his employment relationship with KAFA. Additional information regarding the Fund's directors is contained in the Fund's Statement of Additional Information, the most recent version of which can be found on the Fund's website at <http://www.kaynefunds.com> or is available without charge, upon request, by calling (877) 657-3863.

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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

ANNUAL CERTIFICATION

(UNAUDITED)

The Fund's Chief Executive Officer has filed an annual certification with the NYSE that, as of the date of the certification, he was unaware of any violation by the Fund of the NYSE's corporate governance listing standards.

PROXY VOTING AND PORTFOLIO HOLDINGS INFORMATION

(UNAUDITED)

The policies and procedures that the Fund uses to determine how to vote proxies relating to its portfolio securities are available:

without charge, upon request, by calling (877) 657-3863/MLP-FUND;

on the Fund's website, <http://www.kaynefunds.com>; and

on the SEC's website, <http://www.sec.gov>.

Information regarding how the Fund voted proxies relating to portfolio securities during the most recent 12-month period ended June 30 is available without charge, upon request, by calling (877) 657-3863/MLP-FUND, and on the SEC's website at <http://www.sec.gov> (see Form N-PX).

The Fund files a complete schedule of its portfolio holdings for the first and third quarters of each of its fiscal years with the SEC on Form N-Q and Form N-30B-2. The Fund's Form N-Q and Form N-30B-2 are available on the SEC's website at <http://www.sec.gov> and may be reviewed and copied at the SEC's Public Reference Room in Washington, DC. Information on the operation of the SEC's Public Reference Room may be obtained by calling 1-800-SEC-0330. The Fund also makes its Form N-Q and Form N-30B-2 available on its website at <http://www.kaynefunds.com>.

REPURCHASE DISCLOSURE

(UNAUDITED)

Notice is hereby given in accordance with Section 23(c) of the 1940 Act, that the Fund may from time to time purchase shares of its common and preferred stock and its Notes in the open market or in privately negotiated transactions.

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Directors and Corporate Officers

| | |
|---------------------|--|
| Kevin S. McCarthy | Chairman of the Board of Directors and Chief Executive Officer |
| William R. Cordes | Director |
| Barry R. Pearl | Director |
| Albert L. Richey | Director |
| William L. Thacker | Director |
| James C. Baker | President |
| Terry A. Hart | Chief Financial Officer and Treasurer |
| David J. Shladovsky | Secretary |
| Michael J. O Neil | Chief Compliance Officer |
| J.C. Frey | Executive Vice President, Assistant Secretary and Assistant Treasurer |
| Ron M. Logan, Jr. | Senior Vice President |
| Alan R. Boswell | Vice President |
| Jody C. Meraz | Vice President |

Investment Adviser

KA Fund Advisors, LLC
811 Main Street, 14th Floor
Houston, TX 77002

1800 Avenue of the Stars, Third Floor
Los Angeles, CA 90067

Administrator

Ultimus Fund Solutions, LLC
225 Pictoria Drive, Suite 450
Cincinnati, OH 45246

Stock Transfer Agent and Registrar

American Stock Transfer & Trust Company, LLC
6201 15th Avenue
Brooklyn, NY 11219

(888) 888-0317

Custodian

JPMorgan Chase Bank, N.A.
14201 North Dallas Parkway, Second Floor
Dallas, TX 75254

Independent Registered Public Accounting Firm

PricewaterhouseCoopers LLP
601 S. Figueroa Street, Suite 900
Los Angeles, CA 90017

Legal Counsel

Paul Hastings LLP
101 California Street, Forty-Eighth Floor
San Francisco, CA 94111

Please visit us on the web at <http://www.kaynefunds.com> or call us toll-free at 1-877-657-3863.

This report, including the financial statements herein, is made available to stockholders of the Fund for their information. It is not a prospectus, circular or representation intended for use in the purchase or sale of shares of the Fund or of any securities mentioned in this report.

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Item 2. Code of Ethics.

(a) As of the end of the period covered by this report, the Registrant has adopted a code of ethics that applies to the Registrant’s principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions.

(c) and (d) During the period covered by this report, there was no amendment to, and no waiver, including implicit waiver, was granted from, any provision of the Registrant’s code of ethics that applies to the Registrant’s principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions.

(f)(1) Pursuant to Item 12(a)(1), the Registrant is attaching as an exhibit (EX-99.CODE ETH) a copy of its code of ethics that applies to its principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions.

Item 3. Audit Committee Financial Expert.

(a)(1) The Registrant’s board of directors has determined that the Registrant has four audit committee financial experts serving on its Audit Committee.

(a)(2) The audit committee financial experts are William R. Cordes, Barry R. Pearl, Albert L. Richey, and William L. Thacker. Messrs. Cordes, Pearl, Richey, and Thacker are independent for purposes of this Item.

Item 4. Principal Accountant Fees and Services.

(a) through (d) The information in the table below is provided for professional services rendered to the Registrant by its independent registered public accounting firm, PricewaterhouseCoopers LLP, during the Registrant’s (i) fiscal year ended November 30, 2017, and (ii) fiscal year ended November 30, 2016.

| | 2017 | 2016 |
|--------------------|-------------------|-------------------|
| Audit Fees | \$ 197,000 | \$ 188,000 |
| Audit-Related Fees | | |
| Tax Fees | 138,000 | 111,000 |
| All Other Fees | | |
| Total | \$ 335,000 | \$ 299,000 |

With respect to the table above, Audit Fees are the aggregate fees billed for professional services for the audit of the Registrant’s annual financial statements and services provided in connection with statutory and regulatory filings or engagements. Audit-Related Fees are the aggregate fees billed for assurance and related services reasonably related to the performance of the audit of the Registrant’s financial statements and are not reported under Audit Fees. Tax Fees are the aggregate fees billed for professional services for tax compliance, tax advice and tax planning.

(e)(1) Audit Committee Pre-Approval Policies and Procedures.

(i) Before the auditor is engaged by the Registrant to render audit, audit related or permissible non-audit services to the Registrant or (ii) with respect to non-audit services to be provided by the auditor to the Registrant’s investment adviser or any entity in the Registrant’s investment company complex, if the nature of the services provided relate directly to the operations or financial reporting of the Registrant, either: (a) the Audit Committee shall pre-approve such engagement; or (b) such engagement shall be entered into pursuant to pre-approval policies and procedures established by the Audit Committee. Any such policies and procedures must be detailed as to the particular service and not involve any delegation of the Audit Committee’s responsibilities to the Registrant’s investment adviser. The Audit Committee may delegate to one or more of its members the authority to grant pre-approvals. The pre-approval policies and procedures shall include the requirement that the decisions of any member to whom authority is delegated under this provision be presented to the full Audit Committee at its next scheduled meeting. Under certain limited circumstances, pre-approvals are not required if certain de minimis thresholds are not exceeded, as such thresholds are set forth by the Audit Committee and in accordance with applicable Securities and Exchange Commission rules and regulations.

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(e)(2) None of the services provided to the Registrant described in paragraphs (b) through (d) of this Item 4 were pre-approved by the Audit Committee pursuant to paragraph (c)(7)(i)(C) of Rule 2-01 of regulation S-X.

(f) No disclosures are required by this Item 4(f).

(g) The aggregate non-audit fees billed by PricewaterhouseCoopers LLP for services rendered to the Registrant for the fiscal years ended November 30, 2017 and 2016 were \$138,000 and \$111,000, respectively. The aggregate non-audit fees billed by PricewaterhouseCoopers LLP totaled \$4,893,000 and \$4,516,000 for services rendered to the Registrant's investment adviser and any entity controlling, controlled by, or under common control with the adviser that provides ongoing services to the Registrant for the fiscal years ended November 30, 2017 and 2016, respectively.

(h) The Registrant's Audit Committee has considered the provision of non-audit services that were rendered to the Registrant's investment adviser and any entity controlling, controlled by, or under common control with the investment adviser that provides ongoing services to the Registrant that were not pre-approved pursuant to paragraph (c)(7)(ii) of Rule 2-01 of Regulation S-X and has determined that the provision of such non-audit services is compatible with maintaining the Registrant's principal accountant's independence.

Item 5. Audit Committee of Listed Registrants.

The Registrant has a separately-designated standing audit committee established in accordance with Section 3(a)(58)(A) of the Securities and Exchange Act of 1934, as amended (the Exchange Act). William R. Cordes (Chair), Barry R. Pearl, Albert L. Richey and William L. Thacker are the members of the Registrant's Audit Committee.

Item 6. Investments.

(a) Please see the Schedule of Investments contained in the KMF Annual Report for the fiscal year ended November 30, 2017 included under Item 1 of this Form N-CSR.

(b) Not applicable.

Item 7. Disclosure of Proxy Voting Policies and Procedures for Closed-End Management Investment Companies.

The Registrant has delegated the voting of proxies relating to its voting securities to its investment adviser, KA Fund Advisors, LLC (the Adviser). The respective proxy voting policies and procedures of the Registrant and the Adviser are attached as Exhibit 99.VOTEREG and Exhibit 99.VOTEADV hereto.

Item 8. Portfolio Managers of Closed-End Management Investment Companies.

(a)(1) As of the date of filing this report, the following individuals (the Portfolio Managers) are primarily responsible for the day-to-day management of the Registrant's portfolio:

Kevin S. McCarthy has served as the Registrant's Chief Executive Officer and co-portfolio manager since November 2010 and has served as the Chief Executive Officer and co-portfolio manager of Kayne Anderson MLP Investment Company (KYN) since June 2004, of Kayne Anderson Energy Total Return Fund, Inc. (KYE) since May 2005 and of Kayne Anderson Energy Development Company (KED) since September 2006. Mr. McCarthy has served as a Managing Partner of Kayne Anderson Capital Advisors, L.P. (KACALP) since June 2004 and Co-Managing Partner of the Adviser (collectively with KACALP, Kayne Anderson) since 2006. Prior to that, he was Global Head of Energy at UBS Securities LLC. In this role, he had senior responsibility for all of UBS' energy investment banking activities. Mr. McCarthy was with UBS Securities from 2000 to 2004. From 1995 to 2000, Mr. McCarthy led the energy investment banking activities of Dean Witter Reynolds and then PaineWebber Incorporated. He began his investment banking career in 1984. He earned a BA degree in Economics and Geology from Amherst College in 1981, and an MBA degree in Finance from the University of Pennsylvania's Wharton School in 1984.

J.C. Frey is the Registrant's Executive Vice President, Assistant Secretary, Assistant Treasurer and co-portfolio manager (since November 2010), Managing Partner of KACALP since 2004 and Co-Managing Partner of the Adviser since 2006. He serves as portfolio manager of Kayne Anderson's various funds investing in MLP securities, including serving as a co-portfolio manager, Assistant Secretary and Assistant Treasurer of KYN since June 2004, of KYE since May 2005, and of KED since September 2006, Vice President of KYN from June 2004 through June 2008, of KYE from May 2005 through June 2008, and of KED from September 2006 through July 2008, and Executive Vice President of KYN

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and KYE since June 2008 and of KED since July 2008. Mr. Frey began investing in MLPs on behalf of Kayne Anderson in 1998 and has served as portfolio manager of Kayne Anderson's MLP funds since their inception in 2000. In addition to the closed-end funds, Mr. Frey manages approximately \$4 billion in assets in MLPs and midstream companies and other Kayne Anderson energy funds. Prior to joining Kayne Anderson in 1997, Mr. Frey was a CPA and audit manager in KPMG Peat Marwick's financial services group, specializing in banking and finance clients and loan securitizations. Mr. Frey graduated from Loyola Marymount University with a BS degree in Accounting in 1990. In 1991, he received a Master's degree in Taxation from the University of Southern California.

James C. Baker is the Registrant's Director and President and co-portfolio manager of KYN, KYE, KED and KMF (since November 2017). Mr. Baker has served as Senior Managing Director of KACALP and the Adviser since February 2008; President of KYN, KYE, KED and KMF since June 2016; and Executive Vice President of KYN and KYE from June 2008 to June 2016 and of KED and KMF from August 2010 to June 2016. Prior to joining Kayne Anderson in 2004, Mr. Baker was Director in Planning and Analysis at El Paso Corporation from April 2004 to December 2004. Prior to that, he was a Director in the energy investment banking group at UBS Securities LLC. At UBS, he focused on securities underwriting and mergers and acquisitions in the energy industry. Prior to joining UBS in 2000, Mr. Baker was an Associate in the energy investment banking group at PaineWebber Incorporated. He earned a BBA degree in Finance from the University of Texas at Austin in 1995 and an MBA degree in Finance from Southern Methodist University in 1997.

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(a)(2)(i) and (ii) Other Accounts Managed by Portfolio Managers:

The following table reflects information regarding accounts for which the Portfolio Managers have day-to-day management responsibilities (other than the Registrant). Accounts are grouped into three categories: (i) registered investment companies, (ii) other pooled investment vehicles, and (iii) other accounts, and include accounts that pay advisory fees based on account performance shown in the separate table below under (a)(2)(iii). Information is shown as of November 30, 2017. Asset amounts are approximate and have been rounded.

| Portfolio Manager | Registered Investment Companies (excluding the Registrant) | | Other Pooled Investment Vehicles | | Other Accounts | |
|-------------------|--|---|-------------------------------------|---|-----------------------|---|
| | Number of Accounts | Total Assets in the Accounts (\$ in millions) | Number of Accounts | Total Assets in the Accounts (\$ in millions) | Number of Accounts | Total Assets in the Accounts (\$ in millions) |
| Kevin S. McCarthy | 3 | \$ 4,215 | | \$ | 8 | \$ 284 |
| J.C. Frey | 5 | \$ 4,577 | 13 | \$ 2,652 | 16 | \$ 890 |
| James C. Baker | 3 | \$ 4,215 | | \$ | 8 | \$ 284 |

(a)(2)(iii) Other Accounts that Pay Performance-Based Advisory Fees Managed by Portfolio Managers:

The following table reflects information regarding accounts for which the Portfolio Managers have day-to-day management responsibilities (other than the Registrant) and with respect to which the advisory fee is based on the performance of the account. Information is shown as of November 30, 2017. Asset amounts are approximate and have been rounded.

| Portfolio Manager | Registered Investment Companies (excluding the Registrant) | | Other Pooled Investment Vehicles | | Other Accounts | |
|-------------------|--|---|-------------------------------------|---|-----------------------|---|
| | Number of Accounts | Total Assets in the Accounts (\$ in millions) | Number of Accounts | Total Assets in the Accounts (\$ in millions) | Number of Accounts | Total Assets in the Accounts (\$ in millions) |
| Kevin S. McCarthy | | N/A | | \$ | 7 | \$ 269 |
| J.C. Frey | | N/A | 11 | \$ 2,539 | 5 | \$ 390 |
| James C. Baker | | N/A | | \$ | 7 | \$ 269 |

(a)(2)(iv) Potential Material Conflicts of Interest:

Some of the other accounts managed by Messrs. McCarthy, Frey and Baker have investment strategies that are similar to those of the Registrant. However, Kayne Anderson manages potential conflicts of interest by allocating investment opportunities in accordance with its written allocation policies and procedures.

(a)(3) Compensation of Each Portfolio Manager:

As of November 30, 2017, Messrs. McCarthy, Frey and Baker compensated by Kayne Anderson through partnership distributions from Kayne Anderson, based on the amount of assets they manage, and they receive a portion of the advisory fees applicable to those accounts (including the Registrant), which, with respect to certain accounts (not including the Registrant), as noted above, are based in part on the performance of those accounts.

Additional benefits received by Messrs. McCarthy, Frey and Baker are normal and customary benefits generally available to all salaried employees.

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(a)(4) As of November 30, 2017, the end of the Registrant's most recently completed fiscal year, the dollar range of equity securities beneficially owned by each Portfolio Manager in the Registrant is shown below:

Kevin S. McCarthy: over \$1,000,000

J.C. Frey: \$500,001-\$1,000,000

James C. Baker: \$500,001-\$1,000,000

Through their limited partnership interests in KACALP, which owns shares of Registrant's common stock, Messrs. McCarthy, Frey and Baker could be deemed to also indirectly own a portion of the Registrant's equity securities.

(b) Not applicable.

Item 9. Purchases of Equity Securities by Closed-End Management Investment Company and Affiliated Purchasers.**REGISTRANT PURCHASES OF EQUITY SECURITIES**

| Period | (a) Total Number of Shares Purchased | (b) Average Price Paid per Share | (c) Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs | (d) Maximum Number (or Approximate Dollar Value) of Shares that May Yet Be Purchased Under the Plans or Programs |
|----------------------|--|---|---|--|
| December 1-31, 2016 | | \$ | | Not applicable. |
| January 1-31, 2017 | 52,781* | \$ 16.38 | | Not applicable. |
| February 1-28, 2017 | | \$ | | Not applicable. |
| March 1-31, 2017 | | \$ | | Not applicable. |
| April 1-30, 2017 | 48,227* | \$ 16.05 | | Not applicable. |
| May 1-31, 2017 | | \$ | | Not applicable. |
| June 1-30, 2017 | | \$ | | Not applicable. |
| July 1-31, 2017 | 47,398* | \$ 15.26 | | Not applicable. |
| August 1-31, 2017 | | \$ | | Not applicable. |
| September 1-30, 2017 | | \$ | | Not applicable. |
| October 1-31, 2017 | 50,882* | \$ 14.16 | | Not applicable. |
| November 1-30, 2017 | | \$ | | Not applicable. |
| Total | 199,288* | \$ 15.47 | | |

* Specified shares were purchased in the open market pursuant to the terms of the Registrant's Automatic Dividend Reinvestment Plan, adopted November 18, 2010.

Item 10. Submission of Matters to a Vote of Security Holders.

None.

Item 11. Controls and Procedures.

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(a) The Registrant's principal executive and principal financial officers have evaluated the Registrant's disclosure controls and procedures (as defined in Rule 30a-3(c) under the Investment Company Act of 1940, as amended (the "1940 Act")) as of a date within 90 days of the filing of this report and have concluded that the Registrant's disclosure controls and procedures are effective, as of such date, based on the evaluation of these controls and procedures required by Rule 30a-3(b) under the 1940 Act and Rule 13a-15(b) or 15d-15(b) under the Exchange Act.

(b) There have been no changes in the Registrant's internal control over financial reporting (as defined in Rule 30a-3(d) under the 1940 Act) that occurred during the second fiscal quarter of the period covered by this report that have materially affected, or are reasonably likely to materially affect, the Registrant's internal control over financial reporting.

Item 12. Exhibits.

(a)(1) Code of Ethics attached hereto as EX-99.CODE ETH.

(a)(2) Separate certifications of Principal Executive and Principal Financial Officers of the Registrant pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 attached hereto as EX-99.CERT.

(b) Certification of Principal Executive and Principal Financial Officers of the Registrant pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 attached hereto as EX-99.906 CERT.

(99) Proxy Voting Policies of the Registrant attached hereto as EX-99.VOTEREG.

(99) Proxy Voting Policies of the Adviser attached hereto as EX-99.VOTEADV.

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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

Date: January 29, 2018

By: /s/ KEVIN S. MCCARTHY
Kevin S. McCarthy
Chairman of the Board of Directors and Chief Executive Officer

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

Date: January 29, 2018

By: /s/ KEVIN S. MCCARTHY
Kevin S. McCarthy
Chairman of the Board of Directors and Chief Executive Officer

Date: January 29, 2018

By: /s/ TERRY A. HART
Terry A. Hart
Chief Financial Officer and Treasurer

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Exhibit Index

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