

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

Form DEF 14A

May 18, 2012

Table of Contents

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a)

of the Securities Exchange Act of 1934

(Amendment No.)

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

Preliminary Proxy Statement

Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))

Definitive Proxy Statement

Definitive Additional Materials

Soliciting Material Pursuant to Sec. 240.14a-11(c) or Sec. 240.14a-12

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

(Name of Registrant as Specified in Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check the appropriate box):

No fee required.

Fee computed on table below per Exchange Act Rules 14a-6(i)(4) and 0-11.

Edgar Filing: KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC. - Form DEF 14A

- (1) Title of each class of securities to which transactions applies:
- (2) Aggregate number of securities to which transaction applies:
- (3) Per unit price or other underlying value of transaction computed pursuant to Exchange Act Rule 0-11 (set forth the amount on which the filing fee is calculated and state how it was determined):
- (4) Proposed maximum aggregate value of transaction:
- (5) Total fee paid:

.. Fee paid previously with preliminary materials.

.. Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

- (6) Amount Previously Paid:
- (7) Form, Schedule or Registration Statement No.:
- (8) Filing Party:
- (9) Date Filed:

Table of Contents

Kayne Anderson Midstream/Energy Fund, Inc.

717 Texas Avenue, Suite 3100

Houston, TX 77002

1-877-657-3863

May 17, 2012

Dear Fellow Stockholder:

You are cordially invited to attend the 2012 Annual Meeting of Stockholders of Kayne Anderson Midstream/Energy Fund, Inc. (**KMF** or the **Fund**) on June 28, 2012 at 8:00 a.m. Central Time at 717 Texas Avenue, Suite 3100, Houston, TX 77002.

The matters scheduled for consideration at the meeting are (i) the election of two directors of the Fund, (ii) the ratification of the selection of PricewaterhouseCoopers LLP as the Fund's independent registered public accounting firm for 2012 and (iii) a proposal to authorize the Fund to sell shares of its common stock at a net price below net asset value per share, so long as the gross price (before underwriting fees, commissions and offering expenses) is above its net asset value per share, subject to certain conditions, as more fully discussed in the enclosed proxy statement.

Enclosed with this letter are (i) answers to questions you may have about the proposals, (ii) the formal notice of the meeting, (iii) the proxy statement, which gives detailed information about the proposals and why the Board of Directors recommends that you vote to approve them, and (iv) an actual written proxy for you to sign and return. If you have any questions about the enclosed proxy or need any assistance in voting your shares, please call 1-877-657-3863.

Your vote is important. Please complete, sign, and date the enclosed proxy card and return it in the enclosed envelope. This will ensure that your vote is counted, even if you cannot attend the meeting in person.

Sincerely,

Kevin S. McCarthy

Chairman of the Board of Directors,

CEO and President

Table of Contents

TABLE OF CONTENTS

| | |
|--|----|
| <u>ANSWERS TO SOME IMPORTANT QUESTIONS</u> | 1 |
| <u>NOTICE OF 2012 ANNUAL MEETING OF STOCKHOLDERS</u> | 3 |
| <u>GENERAL INFORMATION</u> | 4 |
| <u>PROPOSAL ONE: ELECTION OF DIRECTORS</u> | 6 |
| <u>NOMINEES FOR DIRECTOR WHO ARE NOT INTERESTED PERSONS</u> | 7 |
| <u>REMAINING DIRECTORS WHO ARE NOT INTERESTED PERSONS</u> | 8 |
| <u>REMAINING DIRECTOR WHO IS AN INTERESTED PERSON</u> | 9 |
| <u>DIRECTOR COMPENSATION</u> | 10 |
| <u>COMMITTEES OF THE BOARD OF DIRECTORS</u> | 11 |
| <u>INFORMATION ABOUT EACH DIRECTOR'S QUALIFICATIONS, EXPERIENCE, ATTRIBUTES OR SKILLS</u> | 14 |
| <u>PROPOSAL TWO: RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM</u> | 17 |
| <u>INDEPENDENT ACCOUNTING FEES AND POLICIES</u> | 17 |
| <u>AUDIT COMMITTEE REPORT</u> | 18 |
| <u>PROPOSAL THREE: APPROVAL TO SELL SHARES OF COMMON STOCK AT A NET PRICE BELOW NET ASSET VALUE PER SHARE, SUBJECT TO THE GROSS PRICE (BEFORE UNDERWRITING FEES, COMMISSIONS AND OFFERING EXPENSES) BEING GREATER THAN NET ASSET VALUE PER SHARE</u> | 20 |
| <u>INFORMATION ABOUT EXECUTIVE OFFICERS</u> | 24 |
| <u>COMPENSATION DISCUSSION AND ANALYSIS</u> | 25 |
| <u>SECURITY OWNERSHIP OF MANAGEMENT AND CERTAIN BENEFICIAL OWNERS</u> | 26 |
| <u>SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE</u> | 28 |
| <u>CORPORATE GOVERNANCE</u> | 29 |
| <u>OTHER MATTERS</u> | 31 |
| <u>MORE INFORMATION ABOUT THE MEETING</u> | 31 |
| <u>INVESTMENT ADVISER</u> | 32 |
| <u>ADMINISTRATOR</u> | 33 |
| <u>HOUSEHOLDING OF PROXY MATERIALS</u> | 33 |
| <u>STOCKHOLDER PROPOSALS</u> | 34 |

Table of Contents

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

ANSWERS TO SOME IMPORTANT QUESTIONS

Q. WHAT AM I BEING ASKED TO VOTE FOR ON THIS PROXY?

A. This proxy contains three proposals:

Proposal One the election of two Class II Directors to serve until the Fund's 2015 Annual Meeting of Stockholders and until their successors are duly elected and qualified. The directors currently serving in Class II are Barry R. Pearl and William L. Thacker. Their current terms will expire at the Fund's 2012 Annual Meeting of Stockholders and the Fund's Board of Directors has nominated them for re-election at the meeting.

The election of Mr. Thacker requires the affirmative vote of the holders of a majority of the Fund's Preferred Stock outstanding as of May 11, 2012 (the Record Date).

The election of Mr. Pearl requires the affirmative vote of the holders of a majority of the Fund's Common Stock and Preferred Stock outstanding as of the Record Date, voting together as a single class.

Proposal Two the ratification of the selection of PricewaterhouseCoopers LLP as the Fund's independent registered public accounting firm for its fiscal year ending November 30, 2012. Approval of Proposal Two requires the affirmative vote of a majority of the votes cast by the holders of the Fund's common stock and preferred stock outstanding as of the Record Date, voting together as a single class.

Proposal Three a proposal to authorize the Fund to sell shares of its common stock at a net price less than net asset value per share, so long as the gross price (before underwriting fees, commissions and offering expenses) is above its net asset value per share, subject to certain conditions, for a period expiring on the date of the Fund's 2013 Annual Meeting of Stockholders. Approval of Proposal Three requires: (1) the affirmative vote of a majority of all common stockholders on the records of the Fund's transfer agent as of the Record Date, and (2) the affirmative vote of a majority of the votes cast by the holders of the Fund's common stock and preferred stock outstanding as of the Record Date, voting together as a single class.

Q. HOW DOES THE BOARD OF DIRECTORS SUGGEST THAT I VOTE?

A. The Board of Directors unanimously recommends that you vote FOR all proposals on the enclosed proxy card.

Q. HOW CAN I VOTE?

A. If your shares are held in Street Name by a broker or bank, you will receive information regarding how to instruct your bank or broker to vote your shares. If you are a stockholder of record, you may authorize the persons named as proxies on the enclosed proxy card to cast the votes you are entitled to cast at the meeting by completing, signing, dating and returning the enclosed proxy card. Stockholders of

Table of Contents

record or their duly authorized proxies also may vote in person if able to attend the meeting. However, even if you plan to attend the meeting, we urge you to return your proxy card. That will ensure that your vote is cast should your plans change.

Q. CAN I VIEW THE PROXY STATEMENT AND ANNUAL REPORT ON THE INTERNET?

A. Yes. The proxy statement and Annual Report are available on the Internet at www.kaynefunds.com/kmf/sec-filings/.

This information summarizes information that is included in more

detail in the proxy statement. We urge you to

read the proxy statement carefully.

If you have questions, call 1-877-657-3863.

Table of Contents

Kayne Anderson Midstream/Energy Fund, Inc.

717 Texas Avenue, Suite 3100

Houston, TX 77002

1-877-657-3863

NOTICE OF 2012 ANNUAL MEETING OF STOCKHOLDERS

To the Stockholders of Kayne Anderson Midstream/Energy Fund, Inc.:

NOTICE IS HEREBY GIVEN that the 2012 Annual Meeting of Stockholders of Kayne Anderson Midstream/Energy Fund, Inc., a Maryland corporation (KMF or the Fund), will be held on June 28, 2012 at 8:00 a.m. Central Time at 717 Texas Avenue, Suite 3100, Houston, TX 77002, to consider and vote on the following matters as more fully described in the accompanying proxy statement.

Below are the proposals:

1. To elect two Class II Directors of the Fund, such directors to hold office until the 2015 Annual Meeting of Stockholders and until their successors are duly elected and qualified;
2. To ratify the selection of PricewaterhouseCoopers LLP as the Fund's independent registered public accounting firm for the fiscal year ending November 30, 2012
3. To approve a proposal to authorize the Fund to sell shares of its common stock at a net price less than net asset value per share, so long as the gross price (before underwriting fees, commissions and offering expenses) is above net asset value per share; and
4. To transact any other business that may properly come before the meeting or any adjournment or postponement thereof.

Stockholders of record as of the close of business on May 11, 2012 are entitled to notice of and to vote at the 2012 Annual Meeting of Stockholders (or any adjournment or postponement of the meeting thereof).

By Order of the Board of Directors of the Fund,

David J. Shladovsky

Secretary

May 17, 2012

Houston, Texas

Table of Contents

Kayne Anderson Midstream/Energy Fund, Inc.

717 Texas Avenue, Suite 3100

Houston, TX 77002

1-877-657-3863

PROXY STATEMENT

2012 ANNUAL MEETING OF STOCKHOLDERS

JUNE 28, 2012

This proxy statement is being sent to you by the Board of Directors of Kayne Anderson Midstream/Energy Fund, Inc. (**KMF** or the **Fund**), a Maryland corporation. The Board of Directors is asking you to complete, sign, date and return the enclosed proxy card, permitting your votes to be cast at the 2012 Annual Meeting of Stockholders (the **Annual Meeting**) to be held on June 28, 2012 at 8:00 a.m. Central Time at 717 Texas Avenue, Suite 3100, Houston, TX 77002. Stockholders of record at the close of business on May 11, 2012 (the **Record Date**) are entitled to vote at the Annual Meeting. As a stockholder of the Fund, you are entitled to one vote for each share of common stock and one vote for each share of preferred stock you hold on each matter on which holders of such shares are entitled to vote. This proxy statement and the enclosed proxy are first being mailed to stockholders on or about May 24, 2012.

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE 2012 ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON JUNE 28, 2012: You should have received a copy of the Annual Report for the fiscal year ended November 30, 2011. If you would like another copy of the Annual Report, please write us at the address shown at the top of this page or call us at 1-877-657-3863. The Annual Report will be sent to you without charge. This proxy statement and our Annual Reports can be accessed on our website at www.kaynefunds.com/kmf/sec-filings/ or on the Securities and Exchange Commission's (the **SEC) website (www.sec.gov).**

KA Fund Advisors, LLC (**KAFA**), a subsidiary of Kayne Anderson Capital Advisors, L.P. (**KACALP** and together with KAFA, **Kayne Anderson**), externally manages and advises the Fund pursuant to an investment management agreement. KAFA is registered as an investment adviser under the Investment Advisers Act of 1940, as amended. Kayne Anderson is a leading investor in both public and private energy companies. At March 31, 2012, Kayne Anderson managed approximately \$15 billion, including \$13 billion in securities of energy/infrastructure companies. Kayne Anderson may be contacted at the address listed above.

Table of Contents

This proxy statement sets forth the information that the Fund's stockholders should know in order to evaluate each of the following proposals. The following table presents a summary of the proposals for the Fund and the stockholders of the Fund whose votes are being solicited with respect to each proposal. Please refer to the discussion of each proposal in this proxy statement for information regarding votes required for the approval of each proposal.

Proposals

1. To elect two Class II Directors of the Fund, such directors to hold office until the 2015 Annual Meeting of Stockholders and until their successors are duly elected and qualified.

2. To ratify the selection of PricewaterhouseCoopers LLP as the Fund's independent registered public accounting firm for the fiscal year ending November 30, 2012.

3. To approve a proposal to authorize the Fund to sell shares of its Common Stock at a net price less than net asset value per share, so long as the gross price (before underwriting fees, commissions and offering expenses) is above net asset value per share.

4. To transact any other business that may properly come before the meeting or any adjournment or postponement thereof.

Who votes on the proposals?

(i) The holders of the Fund's Preferred Stock on the election of William L. Thacker as a Class II Director, and (ii) the holders of the Fund's Common Stock and Preferred Stock, voting together as a single class, on the election of Barry R. Pearl as a Class II Director

The holders of the Fund's Common Stock and Preferred Stock, voting together as a single class.

(i) The Registered Common Stockholders (as defined herein), and (ii) the holders of the Fund's Common Stock and Preferred Stock, voting together as a single class.

The holders of the Fund's Common Stock and Preferred Stock, voting together as a single class.

Table of Contents**PROPOSAL ONE****ELECTION OF DIRECTORS**

Under the Fund's charter, the Board of Directors (the Board) is divided into three classes (Class I, Class II and Class III) of approximately equal size. The Board currently has five directors as follows:

| Class | Term* | Directors | Elected By | |
|-------|-------------------------|--------------------|---------------------|------------------------|
| | | | Common Stockholders | Preferred Stockholders |
| I | 3-year term until 2014 | Kevin S. McCarthy | X | X |
| II | Partial term until 2012 | Barry R. Pearl | X | X |
| | | William L. Thacker | | X |
| III | 3-year term until 2013 | William R. Cordes | X | X |
| | | Albert L. Richey | | X |

*Each director serves a three-year term until the Annual Meeting of Stockholders for the designated year and until his or her successor has been duly elected and qualified.

The directors whose terms are expiring at this year's Annual Meeting are the Class II directors, Barry R. Pearl and William L. Thacker. The Board has nominated them for re-election at the Annual Meeting, to serve for terms of three years (until the 2015 Annual Meeting of Stockholders) and until their successors have been duly elected and qualified.

Pursuant to the terms of the Fund's mandatory redeemable preferred stock (the Preferred Stock), the holders of Preferred Stock are entitled as a class, to the exclusion of the holders of the Fund's common stock, \$0.001 par value per share (the Common Stock), to elect two directors of the Fund (the Preferred Directors). The Board has designated William L. Thacker and Albert L. Richey as the Preferred Directors. The terms of the Preferred Stock further provide that the remaining nominees shall be elected by holders of Common Stock and Preferred Stock voting together as a single class. Of those designated as Preferred Directors, William L. Thacker is the sole Preferred Director whose term is expiring at the Annual Meeting.

Therefore, (i) the holders of the Fund's Preferred Stock are being asked to vote for Mr. Thacker as a Class II Director of the Fund, and (ii) the holders of the Fund's Common Stock and Preferred Stock, voting together as a single class, are being asked to vote for Mr. Pearl as a Class II Director of the Fund.

The Board knows of no reason why the nominees listed below will be unable to serve, and the nominees have consented to serve if elected. If a nominee is unable to serve or for good cause will not serve because of an event not now anticipated, the persons named as proxies may vote for another person designated by the Board. The persons named as proxies on the accompanying proxy card intend to vote at the Annual Meeting (unless otherwise directed) FOR the election of Messrs. Pearl and Thacker as the Fund's directors.

The following tables set forth the nominees and each remaining director's name and year of birth; position(s) with the Fund and length of time served; principal occupations during the past five years; and other directorships held during the past five years. The address for the nominee and directors is 717 Texas Avenue, Suite 3100, Houston, TX 77002.

All the directors listed above currently serve on the Board of Directors of Kayne Anderson Energy Development Company (KED), and Mr. McCarthy also serves on the Board of Directors of Kayne Anderson MLP Investment Company (KYN) and Kayne Anderson Energy Total Return Fund, Inc. (KYE). KYN, KYE, KMF and KED are closed-end investment companies registered under the Investment Company Act of 1940, as amended (the 1940 Act) that are advised by Kafa.

Table of Contents

The directors who are not interested persons, as defined in the 1940 Act, of the Fund, of Kayne Anderson or of the Fund's underwriters in offerings of its securities from time to time as defined in the 1940 Act are referred to herein as Independent Directors. None of the Independent Directors nor any of their immediate family members, has ever been a director, officer or employee of Kayne Anderson or its affiliates.

For information regarding the Fund's executive officers and their compensation, please refer to Information About Executive Officers and Compensation Discussion and Analysis below.

NOMINEES FOR DIRECTOR WHO ARE NOT INTERESTED PERSONS

| Name | Position(s) Held with the Fund, | Principal Occupations | Number of Portfolios in Fund Complex(1) | Other Directorships Held by Director |
|-------------------------------|--|---|--|--|
| (Year Born) | Term of Office/ Time of Service | During Past Five Years | Overseen by Director | During Past Five Years |
| Barry R. Pearl (born 1949) | Director. 2-year term (until the 2012 Annual Meeting of Stockholders). Served since inception. | Executive Vice President of Kealine, LLC, a private developer and operator of petroleum infrastructure facilities (and its affiliate WesPac Energy LLC, an energy infrastructure developer), since February 2007. 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. | 2 | Current: KED Targa Resources Partners LP (midstream MLP) Magellan Midstream Partners, L.P. (midstream MLP) Peregrine Midstream Partners LLC (natural gas storage MLP) Prior: Seaspan Corporation (containership) |

chartering)

TEPPCO Partners,
L.P. (midstream MLP)

William L. Thacker
(born 1945)

Director. 2-year term
(until the 2012 Annual
Meeting of
Stockholders). Served
since inception.

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.

2

Current:

KED

Copano Energy,
L.L.C. (midstream
MLP)

GenOn Energy, Inc.
(electricity generation
and sales)

Prior:

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

- (1) The 1940 Act requires the term Fund Complex to be defined to include closed-end funds advised by the Fund's investment adviser, KAFA, and included KYN, KYE, KMF and KED.

Table of Contents**REMAINING DIRECTORS WHO ARE NOT INTERESTED PERSONS**

| Name | Position(s) | Number of | Other |
|----------------------------------|--|---|---|
| (Year Born) | Held with | Portfolios in | Directorships |
| (Year Born) | the Fund, | Fund Complex | Held by Director |
| Term of Office/ | Principal Occupations | Overseen by | During Past |
| Time of Service | During Past Five Years | Director | Five Years |
| William R. Cordes (born 1948) | Director. 3-year term (until the 2013 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. | 2 Current: KED Boardwalk Pipeline Partners, LP (midstream MLP) Prior: Northern Border Partners, L.P. (midstream MLP) |
| Albert L. Richey (born 1949) | Director. 3-year term (until the 2013 Annual Meeting of Stockholders). Served since inception. | Vice President of Anadarko Petroleum Corporation since December 2008; Vice President of Corporate Development from December 2005 to December 2008; Vice President and Treasurer from 1995 to 2005; and Treasurer from 1987 to 1995. | 2 KED Boys & Girls Clubs of Houston Boy Scouts of America |

Table of Contents**REMAINING DIRECTOR WHO IS AN INTERESTED PERSON**

| Name | Position(s) Held with the Fund, Proposed | Principal Occupations | Number of | Other |
|-------------------------------------|---|--|-------------------------------|---|
| | | | Portfolios in Fund Complex | Directorships Held by Director |
| (Year Born) | Term of Office/ Time of Service | During Past Five Years | Overseen by Director | During Past Five Years |
| Kevin S. McCarthy(1) (born 1959) | Chairman of the Board of Directors, President and Chief Executive Officer of the Fund since inception. 3-year term as a director (until the 2014 Annual Meeting of Stockholders), elected annually as an officer. | Senior Managing Director of KACALP since June 2004 and of KAFA since 2006. President and Chief Executive Officer of KYN, KYE, KED and KMF since inception (KYN inception in 2004, KYE inception in 2005, KED inception in 2006 and KMF inception in 2010). Global Head of Energy at UBS Securities LLC from November 2000 to May 2004. | 4 | Current: KYN KYE KED Range Resources Corporation (oil and natural gas company) Direct Fuels Partners, L.P. (transmix refining and fuels distribution) ProPetro Services, Inc. (oilfield services) Prior: |

Clearwater Natural
Resources, L.P. (coal
mining MLP)

International
Resource Partners LP
(coal mining MLP)

K-Sea
Transportation
Partners LP (shipping
MLP)

(1) Mr. McCarthy is an interested person of the Fund by virtue of his employment relationship with Kayne Anderson.

Table of Contents**DIRECTOR COMPENSATION**

Directors and officers who are interested persons by virtue of their employment by Kayne Anderson, including all executive officers, serve without any compensation from the Fund. For the fiscal year ended November 30, 2011:

Each Independent Director received a \$25,000 annual retainer for serving as a director.

The chairperson of the Audit Committee received additional compensation of \$5,000 annually.

In addition, each Independent Director received fees for attending meetings of the Board and its Committees on which such Independent Directors served, as follows: \$2,500 per Board meeting in person or \$2,000 per Board meeting via telephone; \$1,500 per Audit Committee meeting (in person or via telephone); and \$500 for other committee meetings (in person or via telephone). Committee meeting fees were not paid unless the meeting exceeded 15 minutes in duration.

The Independent Directors were reimbursed for expenses incurred as a result of attendance at meetings of the Board and its committees. The following table sets forth the compensation paid by the Fund during the fiscal year ended November 30, 2011 to the Independent Directors. No compensation is paid to directors who are interested persons. The Fund does not have a retirement or pension plans or any compensation plans under which the Fund's equity securities were authorized for issuance.

Director Compensation Table

| Name | Total Compensation from Registrant | Total Compensation(1) from the Fund Complex |
|------------------------------|---------------------------------------|---|
| Independent Directors | | |
| William R. Cordes | \$ 46,000 | \$ 120,500 |
| Barry R. Pearl | 43,000 | 113,000 |
| Albert L. Richey | 43,500 | 114,000 |
| William L. Thacker | 42,500 | 113,500 |
| Interested Director | | |
| Kevin S. McCarthy | None | None |

(1) Compensation from KED and KMF

Table of Contents

COMMITTEES OF THE BOARD OF DIRECTORS

The Board currently has three standing committees: the Audit Committee, the Valuation Committee and the Nominating, Corporate Governance and Compensation Committee (the Nominating Committee).

Audit Committee. Messrs. Cordes, Pearl, Richey and Thacker, each an Independent Director, serve on the Audit Committee. Mr. Cordes currently serves as Chairman of the Audit Committee. The Audit Committee operates under a written charter (the Audit Committee Charter), which was adopted and approved by the Board and established in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934, as amended (the 1934 Act). The Audit Committee Charter conforms to the applicable listing standards of the New York Stock Exchange (the NYSE). The Audit Committee Charter is available on the Fund's website (www.kaynefunds.com). The Audit Committee, among others, approves and recommends to the Board the election, retention or termination of the Fund's independent auditors; approves services to be rendered by such auditors; monitors and evaluates each auditor's performance; reviews the results of the Fund's audit; determines whether to recommend to the Board that the Fund's audited financial statements be included in the Fund's Annual Report; monitors the accounting and reporting policies and procedures of the Fund and the Fund's compliance with regulatory requirements; and responds to other matters as outlined in the Audit Committee Charter. Each Audit Committee member is independent under the applicable NYSE listing standard.

Valuation Committee. Messrs. Pearl, Richey, Thacker and McCarthy serve on the Valuation Committee. The Valuation Committee is responsible for the oversight of the Fund's valuation procedures and the valuation of the Fund's securities in accordance with such procedures. The Valuation Committee operates under a written charter adopted and approved by the Board, a copy of which is available on the Fund's website (www.kaynefunds.com).

Nominating Committee. Messrs. Cordes, Pearl, Richey and Thacker, each an Independent Director, are members of the Nominating Committee. The Nominating Committee is responsible for appointing and nominating Independent Directors to the Board. Each Nominating Committee member is independent under the applicable NYSE listing standards. The Nominating Committee operates under a written charter adopted and approved by the Board (the Nominating Committee Charter), a copy of which is available on the Fund's website (www.kaynefunds.com). The Nominating Committee has not established specific, minimum qualifications that must be met by an individual for the Nominating Committee to recommend that individual for nomination as a director. The Nominating Committee expects to seek referrals for candidates to consider for nomination from a variety of sources, including current directors, the Fund's management, investment adviser and counsel, will consider nominees properly recommended by stockholders, and may also engage a search firm to identify or evaluate or assist in identifying or evaluating candidates. As set forth in the Nominating Committee Charter, in evaluating candidates for a position on the Board, the Nominating Committee considers a variety of factors, including, as appropriate:

the candidate's knowledge in matters relating to the investment company or to the energy industry;

any experience possessed by the candidate as a director or senior officer of public companies;

the candidate's educational background;

the candidate's reputation for high ethical standards and personal and professional integrity;

any specific financial, technical or other expertise possessed by the candidate, and the extent to which such expertise would complement the Board's existing mix of skills and qualifications;

Table of Contents

the candidate's perceived ability to contribute to the ongoing functions of the Board, including the candidate's ability and commitment to attend meetings regularly and work collaboratively with other members of the Board;

the candidate's ability to qualify as an independent director for purposes of the 1940 Act, the candidate's independence from the Fund's service providers and the existence of any other relationships that might give rise to a conflict of interest or the appearance of a conflict of interest; and

such other factors as the Nominating Committee determines to be relevant in light of the existing composition of the Board and any anticipated vacancies or other transitions (*e.g.*, whether or not a candidate is an audit committee financial expert under the federal securities laws).

The Nominating Committee also considers diversity, including gender, race and national origin, education, professional experience, skills and viewpoints in identifying nominees for director. The Nominating Committee does not have a formal policy with respect to diversity; however, the Board and the Nominating Committee believe that it is important that the Board members represent diverse skills, backgrounds, experiences and perspectives.

Prior to making a final recommendation to the Board, the Nominating Committee may conduct personal interviews with the candidates it believes to be the most qualified.

If there is no vacancy on the Board, the Board will not actively seek recommendations from other parties, including stockholders. When a vacancy on the Board occurs and nominations are sought to fill such vacancy, the Nominating Committee may seek nominations from those sources it deems appropriate in its discretion, including the Fund's stockholders.

The Nominating Committee considers nominees properly recommended by stockholders. To submit a recommendation for nomination as a candidate for a position on the Board, stockholders shall mail the recommendation to the Secretary of the Fund at 717 Texas Avenue, Suite 3100, Houston, TX 77002. Such recommendation shall include the following information: (a) evidence of stock ownership of the person or entity recommending the candidate; (b) a full description of the proposed candidate's background, including his or her education, experience, current employment, and date of birth; (c) names and addresses of at least three professional references for the candidate; (d) information as to whether the candidate is an interested person in relation to the Fund, as such term is defined in the 1940 Act, and such other information that may be considered to impair the candidate's independence; and (e) any other information that may be helpful to the Nominating Committee in evaluating the candidate.

Any such recommendation must contain sufficient background information concerning the candidate to enable the Nominating Committee to make a proper judgment as to the candidate's qualifications. If a recommendation is received with satisfactorily completed information regarding a candidate during a time when a vacancy exists on the Board or during such other time as the Nominating Committee is accepting recommendations, the recommendation will be forwarded to the Chair of the Nominating Committee and will be evaluated in the same manner as other candidates for nomination. Recommendations received at any other time will be kept on file until such time as the Nominating Committee is accepting recommendations, at which point they may be considered for nomination.

Table of Contents

Board of Director and Committee Meetings Held

The following table shows the number of meetings held for the Fund for the fiscal year ended November 30, 2011:

| | |
|----------------------|---|
| Board of Directors | 4 |
| Audit Committee | 3 |
| Valuation Committee | 5 |
| Nominating Committee | 3 |

During the fiscal year ended November 30, 2011, all directors attended at least 75% of the aggregate of (1) the total number of meetings of the Board and (2) the total number of meetings held by all committees of the Board on which they served. The Fund does not currently have a policy with respect to Board member attendance at annual meetings.

Please refer to Corporate Governance on page 29 for a review of the Board's leadership structure, role in risk oversight and other matters.

Table of Contents

**INFORMATION ABOUT EACH DIRECTOR'S QUALIFICATIONS,
EXPERIENCE, ATTRIBUTES OR SKILLS**

The Board believes that each of its directors has the qualifications, experience, attributes and skills (Director Attributes) appropriate to their continued service as directors of the Fund in light of the Fund's business and structure. Each of the directors has a demonstrated record of business and/or professional accomplishment that indicates that they have the ability to critically review, evaluate and access information provided to them. Certain of these business and professional experiences are set forth in detail in the tables above under Information Regarding Nominee and Directors. Each of the directors has served on KED's Board of Directors for a number of years. In addition, all of the directors have served as members of the board of other public companies, non-profit entities or other organizations. They therefore have substantial boardroom experience and, in their service to KED and the Fund, have gained substantial insight into its operation and have demonstrated a commitment to discharging oversight duties as directors in the interests of stockholders.

In addition to the information provided in the tables above, certain additional information regarding the directors and their Director Attributes is provided below. The information provided below, and in the tables above, is not all-inclusive. Many Director Attributes involve intangible elements, such as intelligence, integrity and work ethic, along with the ability to work with other members of the Board, to communicate effectively, to exercise judgment and to ask incisive questions, and commitment to stockholder interests. The Board annually conducts a self-assessment wherein the effectiveness of the Board and individual directors is reviewed.

Kevin S. McCarthy. Mr. McCarthy is Chairman, President and Chief Executive Officer of the Fund. In this position, Mr. McCarthy has extensive knowledge of the Fund, its operations, personnel and financial resources. Prior to joining Kayne Anderson in 2004, Mr. McCarthy was most recently global head of energy at UBS Securities LLC. In this role, he had senior responsibility for all of UBS' energy investment banking activities, including direct responsibilities for securities underwriting and mergers and acquisitions in the MLP industry. 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. In addition to his directorships at KYN, KYE, KMF and KED, he is also on the board of directors of Range Resources Corporation, ProPetro Services, Inc., and Direct Fuel Partners, L.P. Mr. McCarthy earned a B.A. in Economics and Geology from Amherst College in 1981 and an M.B.A. in Finance from the Wharton School at the University of Pennsylvania in 1984. Mr. McCarthy's position of influence and responsibility at the Fund and at KAFA, combined with his experience advising energy companies as an investment banker, make him a valued member of the Board.

William R. Cordes. Mr. Cordes has worked in the natural gas industry for more than 35 years, including positions as Chief Executive Officer of Northern Border Partners, L.P. (now ONEOK Partners, L.P.) and President of Northern Natural Gas Company and Transwestern Pipeline Company. Mr. Cordes began his career with Northern Natural Gas Company in 1970, and held a number of accounting, regulatory affairs and executive positions in the natural gas retail and interstate pipeline divisions of the company. In addition to his KMF directorship, Mr. Cordes currently serves on the Board of Directors of KED, where he serves as Chairman of the Audit Committee, and of Boardwalk Pipeline Partners, LP, where he serves as a member of the Audit and Conflicts Committee. He has served on the board of Northern Border Partners, L.P., the Interstate Natural Gas Association of America and as past Chairman of the Midwest Energy Association. Mr. Cordes graduated from the University of Nebraska with a degree in Business Administration. Mr. Cordes' extensive executive experience in the MLP sector and the energy industry, as well as his board experience as a director of several energy-related companies, allows him to provide the Board with insight into the energy industry in general and natural gas pipelines in particular.

Table of Contents

Barry R. Pearl. Mr. Pearl is Executive Vice President of Kealine LLC, a private developer and operator of petroleum infrastructure facilities (and its affiliate WesPac Energy LLC, an energy infrastructure developer), serving since February 2007. In addition to his KMF directorship, Mr. Pearl is a member of the Board of Directors of KED. Mr. Pearl is also a member of the Board of Directors of Targa Resources Partners LP, where he serves as Chairman of the Audit and Conflicts Committee, and of Magellan Midstream Partners, L.P., where he serves as a member of the Audit Committee. From 2006 to 2010 Mr. Pearl was a member of the Board of Directors of Seaspan Corporation. Mr. Pearl was elected President of Texas Eastern Products Pipeline Company, LLC in February 2001 and Chief Executive Officer and director of TEPPCO Partners, L.P. (TEPPCO) in May 2002, where he served until December 31, 2005. Mr. Pearl was previously Chief Operating Officer of TEPPCO from February 2001 until May 2002. Prior to joining TEPPCO, Mr. Pearl was Vice President Finance and Administration, Treasurer, Secretary and Chief Financial Officer of Maverick Tube Corporation from June 1998. Mr. Pearl was Senior Vice President and Chief Financial Officer of Santa Fe Pacific Pipeline Partners, L.P. from 1995 until 1998, and Senior Vice President, Business Development from 1992 to 1995. Mr. Pearl is past Chairman of the Executive Committee of the Association of Oil Pipelines. Mr. Pearl graduated from Indiana University in 1970 with a Bachelor of Arts degree in Mathematics. He received a Master of Arts degree in Operations Research from Yale University in 1972 and a Master in Business Administration degree from Denver University in 1975. In addition to his extensive executive experience in the MLP sector and the energy industry, as well as his board experience as a director of several energy-related companies, Mr. Pearl brings to the Board many years of experience as the chairman of the audit committees of several public companies.

Albert L. Richey. Mr. Richey is a Vice President at Anadarko Petroleum Corporation. From December 2005 through December 2008 he served as Vice President, Corporate Development. Mr. Richey joined Anadarko in 1987 as Manager of Treasury Operations. He was named Treasurer later that year and was named Vice President in 1995. Mr. Richey's background in the oil and gas industry includes The Offshore Company (a predecessor company to Transocean Ltd.), United Energy Resources and Sandefer Oil & Gas. Mr. Richey received a Bachelor of Science degree in Commerce in 1971 from the University of Virginia. In 1974, he earned a Master of Business Administration degree from the Darden Graduate School of Business at the University of Virginia. In addition to his KMF directorship, he serves as a member of the Board of Directors for KED, the Boys & Girls Clubs of Houston and Boy Scouts of America. In addition to his background in the energy industry, Mr. Richey's professional experience related to financial matters and his role as an executive in one of the largest independent domestic exploration and production companies equip him to offer further insights to the Board.

William L. Thacker. Mr. Thacker is the Chairman of the Board of Directors of Copano Energy, L.L.C. and is a member of the Compensation and Nominating and Governance Committees. Mr. Thacker is a member of the Board of Directors of GenOn Energy, Inc. where he serves as Chairman of the Compensation Committee and of KED. From April 2004 until November 2006 he was also a member of the Board of Directors of Pacific Energy Management, LLC, the general partner of Pacific Energy GP, LP, which was in turn the general partner of Pacific Energy Partners, L.P. He served as Chairman of the Nominating and Governance Committee of Pacific Energy Management, LLC. Mr. Thacker joined Texas Eastern Products Pipeline Company, LLC (the general partner of TEPPCO) in September 1992 as President, Chief Operating Officer and Director. He was elected Chief Executive Officer in January 1994. In March 1997, he was named to the additional position of Chairman of the Board, which he held until his retirement in May 2002. Prior to joining Texas Eastern Products Pipeline Company, LLC, Mr. Thacker was President of Unocal Pipeline Company from 1986 until 1992. Mr. Thacker is past Chairman of the Executive Committee of the Association of Oil Pipelines and has served as a member of the Board of Directors of the American Petroleum Institute. Mr. Thacker holds a Bachelor of Mechanical Engineering degree from the Georgia Institute of Technology and a Master of Business Administration degree from Lamar University. Mr. Thacker has extensive experience in the MLP sector and the energy industry. In addition, Mr. Thacker brings to the Board many years of experience as a board member of several publicly-traded energy companies.

Table of Contents

Required Vote

The election of Mr. Thacker as a Class II Director under this proposal requires the affirmative vote of the holders of a majority of the Fund's Preferred Stock outstanding as of the Record Date. For purposes of this proposal, each share of Preferred Stock is entitled to one vote.

The election of Mr. Pearl as a Class II Director under this proposal requires the affirmative vote of the holders of a majority of the Fund's Common Stock and Preferred Stock outstanding as of the Record Date, voting together as a single class. For purposes of this proposal, each share of Common Stock, and each share of Preferred Stock, is entitled to one vote.

Abstentions, if any, will have the same effect as votes against the elections of Messrs. Pearl and Thacker although they will be considered present for purposes of determining the presence of a quorum at the Annual Meeting.

In uncontested elections of directors, brokers are permitted by applicable regulations to vote shares as to which instructions have not been received from the beneficial owners or the persons entitled to vote. For this reason, it is anticipated that there will be few, if any, broker non-votes in connection with this proposal. However, broker non-votes, if any, will have the same effect as a vote against the nominee, although they would be considered present for purposes of determining a quorum.

BOARD RECOMMENDATION

THE BOARD, INCLUDING ALL OF THE INDEPENDENT DIRECTORS, UNANIMOUSLY RECOMMENDS THAT YOU VOTE FOR THE ELECTIONS OF THE NOMINEES TO THE BOARD.

Table of Contents**PROPOSAL TWO****RATIFICATION OF SELECTION OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

The Audit Committee and the Board, including all of the Independent Directors, have selected PricewaterhouseCoopers LLP as the independent registered public accounting firm for the Fund for the year ending November 30, 2012 and are submitting the selection of PricewaterhouseCoopers LLP to the stockholders for ratification.

PricewaterhouseCoopers LLP has audited the financial statements of the Fund since inception and has informed the Fund that it has no direct or indirect material financial interest in the Fund or in Kayne Anderson.

A representative of PricewaterhouseCoopers LLP will be available at the Annual Meeting to make a statement, if such representative so desires, and to respond to stockholders' questions.

The Audit Committee normally meets two times each year with representatives of PricewaterhouseCoopers LLP to discuss the scope of their engagement, review the financial statements of the Fund and the results of their examination.

INDEPENDENT ACCOUNTING FEES AND POLICIES**Audit and Related Fees**

The following table sets forth the approximate amounts of the aggregate fees billed to the Fund for the fiscal year ended November 30, 2011 and the partial fiscal year ended November 30, 2010, respectively, by PricewaterhouseCoopers LLP.

| | 2011 | 2010 |
|-----------------------------|-------------|-------------|
| Audit Fees(1) | \$ 181,000 | \$ 70,000 |
| Audit-Related Fees(2) | | 35,000 |
| Tax Fees(3) | 42,500 | 42,500 |
| All Other Fees | | |
| Aggregate Non-Audit Fees(4) | | |

(1) For professional services rendered with respect to the audit of the Fund's annual financial statements.

(2) For professional services rendered with respect to assurance and related services reasonably related to the performance of the audits of the Fund's annual financial statements not included in Audit Fees above.

(3) For professional services for tax compliance, tax advice and tax planning.

(4) Neither the Fund, nor KAFA or any entity controlling, controlled by, or under common control with KAFA that provides ongoing services to the Fund, was billed by PricewaterhouseCoopers LLP for any non-audit services during the fiscal year ended November 30, 2011 and the partial fiscal year ended November 30, 2010.

Audit Committee Pre-Approval Policies and Procedures

Before the auditor is engaged by the Fund to render audit, audit-related or permissible non-audit services to the Fund, 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. Before any non-audit services may be provided by the auditor to Kayne Anderson or any entity in the

investment company complex (*i.e.*, the Fund, Kayne Anderson and any entity controlled by, controlling or under common control with Kayne Anderson if such entity is an investment adviser or is engaged in

Table of Contents

the business of providing administrative, custodian, underwriting or transfer agent services to the Fund or Kayne Anderson), if the nature of the services to be provided relate directly to the Fund's operations or financial reporting, such non-audit services must be pre-approved by the Audit Committee. Any pre-approval policies and procedures established by the Audit Committee must be detailed as to the particular service and not involve any delegation of the Audit Committee's responsibilities to Kayne Anderson. 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 shall 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 SEC rules and regulations.

For engagements with PricewaterhouseCoopers LLP, the Audit Committee approved in advance all audit services and non-audit services, if any, that PricewaterhouseCoopers LLP provided to the Fund and to Kayne Anderson (with respect to the Fund's operations and financial reporting). None of the services rendered by PricewaterhouseCoopers LLP to the Fund or Kayne Anderson were pre-approved by the Audit Committee pursuant to the pre-approval exception under Rule 2.01(c)(7)(i)(C) or Rule 2.01(c)(7)(ii) of Regulation S-X. The Audit Committee has considered and concluded that the provision of non-audit services rendered by PricewaterhouseCoopers LLP to Kayne Anderson and any entity controlling, controlled by, or under common control with Kayne Anderson that were not required to be pre-approved by the Audit Committee is compatible with maintaining PricewaterhouseCoopers LLP's independence.

AUDIT COMMITTEE REPORT

The Audit Committee of the Board of Directors (the "Board") is responsible for assisting the Board in monitoring (1) the accounting and reporting policies and procedures of the Fund, (2) the quality and integrity of the Fund's financial statements, (3) the Fund's compliance with regulatory requirements, and (4) the independence and performance of the Fund's independent auditors and any internal auditors. Among other responsibilities, the Audit Committee reviews, in its oversight capacity, the Fund's annual financial statements with both management and the independent auditors, and the Audit Committee meets periodically with the independent auditors and any internal auditors to consider their evaluation of the Fund's financial and internal controls. The Audit Committee also selects, retains and evaluates and may replace the Fund's independent auditors and determines their compensation, subject to ratification of the Board, if required. The Audit Committee is currently composed of four Directors. The Audit Committee operates under a written charter (the "Audit Committee Charter") adopted and approved by the Board, a copy of which is available on the Fund's website (www.kaynefunds.com). Each Audit Committee member is independent as defined by New York Stock Exchange listing standards.

The Audit Committee, in discharging its duties, has met with and held discussions with management and the Fund's independent auditors and any internal auditors. The Audit Committee has reviewed and discussed the Fund's audited financial statements with management. Management has represented to the independent auditors that the Fund's financial statements were prepared in accordance with accounting principles generally accepted in the U.S. The Audit Committee has also discussed with the independent auditors the matters required to be discussed by the statement on Auditing Standards No. 61, as amended (AICPA, Professional Standards, Vol. 1, AU section 380), as adopted by the Public Company Accounting Oversight Board in Rule 3200T. The Audit Committee has received the written disclosures and the letter from the Fund's independent auditors required by applicable requirements of the Public Company Accounting Oversight Board regarding the independent auditors' communications with the Audit Committee concerning independence, and has discussed with the independent auditors the independent auditors' independence. As provided in the Audit Committee Charter, it is not the Audit Committee's responsibility to determine, and

Table of Contents

the considerations and discussions referenced above do not ensure, that the Fund's financial statements are complete and accurate and presented in accordance with accounting principles generally accepted in the U.S.

Based on the Audit Committee's review and discussions with management and the independent auditors, the representations of management and the report of the independent auditors to the Audit Committee, the Audit Committee has recommended that the Board include the audited financial statements in the Fund's Annual Report on Form N-CSR for the fiscal year ended November 30, 2011 filed with the Securities and Exchange Commission.

Submitted by the Audit Committee:

William R. Cordes

Barry R. Pearl

Albert L. Richey

William L. Thacker

Required Vote

The approval of this proposal requires the affirmative vote of a majority of the votes cast by the holders of the Fund's Common Stock and Preferred Stock outstanding as of the Record Date, voting together as a single class. For purposes of this proposal, each share of Common Stock and each share of Preferred Stock is entitled to one vote.

For purposes of the vote on this proposal, abstentions and broker non-votes will not be counted as votes cast and will have no effect on the result of the vote.

BOARD RECOMMENDATION

THE BOARD, INCLUDING ALL OF THE INDEPENDENT DIRECTORS, UNANIMOUSLY RECOMMENDS THAT YOU VOTE FOR THE RATIFICATION OF PRICEWATERHOUSECOOPERS LLP AS THE FUND'S INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM.

Table of Contents**PROPOSAL THREE**

**APPROVAL TO SELL SHARES OF COMMON STOCK AT A NET PRICE BELOW NET ASSET
VALUE PER SHARE, SUBJECT TO THE GROSS PRICE (BEFORE UNDERWRITING FEES,
COMMISSIONS AND OFFERING EXPENSES) BEING GREATER THAN
NET ASSET VALUE PER SHARE**

Summary

The 1940 Act prohibits the Fund from selling shares of its common stock at a net price, after deducting underwriting fees, commissions and offering expenses, below the current net asset value (NAV) per share of such stock, except with the consent of a majority of the Fund's common stockholders or under certain other circumstances. The Fund may be presented with potential investments that Kafa believes are sufficiently attractive to justify selling shares of the Fund's common stock at a net price below its then-current NAV per share, which could be made only if the Fund raises additional capital in that manner. The Board is seeking the required stockholder approval so the Fund may sell shares of its common stock at a net price below its then-current NAV per share, so long as the gross price (before underwriting fees, commissions and offering expenses) is above its then-current NAV, subject to certain conditions discussed below. If approved, the authorization would be effective for a period expiring on the date of the Fund's 2013 Annual Meeting of Stockholders, which is expected to be held in June 2013.

Rationale

The Fund expects that it will be periodically presented with opportunities to acquire securities at attractive prices that may lead to an increase in the Fund's long-term NAV, including publicly traded securities purchased at a discount to current market value in negotiated transactions. The Fund believes that having the ability to issue its common stock at a net price below NAV could benefit its stockholders by providing it with the flexibility to enter into such negotiated transactions, which have the potential to increase the Fund's long-term NAV per share.

These negotiated transactions often require the Fund to commit capital in a relatively short period of time, and such commitments cannot be contingent upon future financings. Because the Fund generally attempts to remain fully invested and does not intend to maintain cash for the purpose of making these investments, the Fund may be unable to capitalize on investment opportunities presented to it unless it is confident that it can raise equity capital without seeking stockholder approval on a case-by-case basis.

NAV and Share Price History of the Fund's Common Stock

The Fund's common stock has traded both at a premium and at a discount in relation to its NAV per share. The following table sets forth a comparison of the Fund's NAV per share and the comparable closing price of its common stock per share, as reported on the NYSE, as of the last day of each fiscal quarter since the inception of the Fund.

| Date | Net Asset Value | Closing Price | Premium/ (Discount) |
|-------------------|------------------------|----------------------|----------------------------|
| February 29, 2012 | \$ 29.18 | \$ 26.74 | (8)% |
| November 30, 2011 | 25.94 | 22.46 | (13) |
| August 31, 2011 | 23.97 | 22.92 | (4) |
| May 31, 2011 | 26.78 | 25.10 | (6) |
| February 28, 2011 | 26.23 | 24.82 | (5) |
| November 30, 2010 | 23.80 | 25.00 | 5 |

Table of Contents

Conditions for Selling the Fund's Common Stock at a Net Price Below NAV, Subject to the Gross Price Being Greater than NAV

If this proposal is approved, the Fund does not anticipate selling its common stock at a net price below its NAV unless it has identified attractive near-term investment opportunities that Kafa reasonably believes will lead to a long-term increase in NAV. In determining whether or not to sell additional shares of the Fund's common stock at a net price below the NAV per share, the Board of Directors will have duties to act in the best interest of the Fund and its stockholders. To the extent the Fund issues shares of its common stock at a net price below NAV in a publicly registered transaction, the Fund's market capitalization and the amount of its publicly tradable common stock will increase, thus affording all common stockholders greater liquidity.

The Fund will only sell shares of its common stock at a net price below NAV per share if all of the following conditions are met:

1. The gross offering price per share, before deduction of underwriting fees, commissions and offering expenses, will not be less than the NAV per share of the Fund's common stock, as determined at any time within two business days before pricing of the common stock to be sold in such offering.
2. Immediately following each offering of common stock, after deducting offering expenses and underwriting fees and commissions, the NAV per share of the Fund's common stock, as determined at any time within two business days before pricing of such common stock offering, would not have been diluted by greater than a total of 1% of such value per share of all outstanding common stock as a result of such offering, without regard to any other offering. The Fund will not be subject to a maximum number of shares that can be sold or a defined minimum sales price per share in any offering so long as the aggregate number of shares offered and the price at which such shares are sold in one or a series of related transactions together would not result in dilution of the NAV per share of the Fund's common stock in excess of the 1% limitation.
3. A majority of the Fund's Independent Directors makes a determination, based on information and a recommendation from Kafa, that they reasonably expect that the investment(s) to be made with the net proceeds of such issuance will lead to a long-term increase in NAV.

Factors to Consider

Before voting on this proposal or giving proxies with regard to this matter, common stockholders of the Fund should consider the potentially dilutive effect of the issuance of shares of the Fund's common stock at a net price less than NAV per share on the NAV per share of common stock then-outstanding. Any sale of common stock at a net price below NAV would result in an immediate dilution to existing common stockholders. Common stockholders of the Fund should also consider that holders of the Fund's common stock have no subscription, preferential or pre-emptive rights to additional shares of the common stock proposed to be authorized for issuance, and thus any future issuance of common stock will dilute such stockholders' holdings of common stock as a percentage of shares outstanding.

The two examples below assume that the Fund has an NAV of \$29.00 per share with 21.8 million shares outstanding and that the underwriting fees, commissions and expenses are 5% of the gross offering price per share.

Example 1. A gross offering price of \$29.00 per share (equal to the NAV) would result in a net offering price of \$27.55 per share after deducting the underwriting fees, commissions and expenses. The maximum number of shares that the Fund could issue in this example is 5.5 million shares before reaching the cap of 1% dilution to NAV per share, or \$0.29 per share.

Table of Contents

Example 2. A gross offering price of \$29.50 per share (above NAV) would result in a net offering price of \$28.03 per share after deducting the underwriting fees, commissions and expenses. The maximum number of shares that the Fund could issue in this example is approximately 9.3 million shares before reaching the cap of 1% dilution to NAV per share, or \$0.29 per share.

As discussed above, the Fund will only sell shares of its common stock at a net price below NAV per share so long as the relevant offering would not result in dilution of the NAV per share in excess of 1%. However, it is possible that the Fund could effect multiple offerings of its common stock, each of which would meet the 1% limitation, but which would cumulatively result in a dilutive effect of greater than 1% of the NAV per share.

The issuance of additional shares of common stock will also have an effect on the gross amount of management fees paid by the Fund to Kafa. The Fund's investment advisory agreement with Kafa provides for a management fee payable to Kafa as compensation for managing the investment portfolios of the Fund computed as a percentage of assets under management. The increase in a Fund's asset base that would result from any issuance of shares of common stock proposed to be authorized by common stockholders in this proposal would increase assets of the Fund under management, and would cause a corresponding increase in the gross amount of management fees paid to Kafa, but would not increase or decrease the management fee as a percentage of assets under management. However, by increasing the size of the Fund's asset base and number of shares outstanding, the Fund may be able to reduce its fixed expenses both as a percentage of total assets and on a per share basis.

Required Vote

The approval of this proposal requires:

- (1) the affirmative vote of a majority of all holders of the Fund's Common Stock on the records of the Fund's transfer agent (Registered Common Stockholders) as of the Record Date (the Registered Common Stockholder Vote), and
- (2) the affirmative vote of a majority of the votes cast by the holders of the Fund's Common Stock and Preferred Stock outstanding as of the Record Date, voting together as a single class (the Majority Stockholder Vote).

For purposes of the Registered Common Stockholder Vote, abstentions will have the effect of votes AGAINST this proposal; and broker non-votes are not relevant for this vote because no brokers are stockholders of record with the transfer agent.

Brokers hold shares through a nominee stockholder of record that does not vote, effectively resulting in a vote AGAINST for purposes of the Registered Common Stockholder Vote. For purposes of the Majority Stockholder Vote, abstentions will have the effect of votes AGAINST this proposal, and broker non-votes will have no effect on the outcome.

The vast majority of shareholders hold their shares beneficially through brokers and are not Registered Common Stockholders. In fact, as of March 31, 2012 the Fund had only 14 Registered Common Stockholders, including the nominee used by brokers.

Stockholders should note that various affiliates of Kafa, such as its officers and employees, are Registered Common Stockholders of the Fund and intend to participate in the Registered Common Stockholder Vote. Because there are so few Registered Common Stockholders, these affiliates represent a substantial percentage of the total number of the Fund's Registered Common Stockholders. For that reason, votes cast by these affiliates will likely determine whether this proposal is approved pursuant to the Registered Common Stockholder Vote. In order to mitigate the conflict of interest these affiliates may have in voting for this

Table of Contents

proposal pursuant to the Registered Common Stockholder Vote, each such affiliate intends to vote in favor of this proposal pursuant to the Registered Common Stockholder Vote only if this proposal is approved pursuant to the Majority Stockholder Vote. Using this method, the approval of the proposal is likely to be determined by the Majority Stockholder Vote.

BOARD RECOMMENDATION

THE BOARD, INCLUDING ALL OF THE INDEPENDENT DIRECTORS, UNANIMOUSLY RECOMMENDS THAT STOCKHOLDERS OF THE FUND VOTE FOR THE PROPOSAL TO ALLOW THE FUND TO SELL SHARES OF ITS COMMON STOCK AT A NET PRICE BELOW NAV PER SHARE, SO LONG AS THE GROSS PRICE IS ABOVE NAV PER SHARE, SUBJECT TO CERTAIN CONDITIONS.

Table of Contents**INFORMATION ABOUT EXECUTIVE OFFICERS**

The following table sets forth each executive officer's name and year of birth; position(s) with the Fund, term of office, and length of time served; principal occupations during the past five years; and directorships. The address for the Fund's offices is 717 Texas Avenue, Suite 3100, Houston, TX 77002. All executive officers currently serve in identical offices with KYN, KYE, KMF and KED.

| Name | Position(s) Held with the Fund, | Principal Occupations During Past Five Years | Officers | |
|--------------------------------------|---|--|--|---|
| | | | Number of Portfolios in Fund Complex Overseen by Officer | Other Directorships Held by Officer During Past Five Years |
| (Year Born) | Term of Office/ Time of Service | | | |
| Kevin S. McCarthy (born 1959) | Chairman of the Board of Directors, President and Chief Executive Officer. 3-year term as a director (until the 2014 Annual Meeting of Stockholders), elected annually as an officer. Served since inception. | Senior Managing Director of KACALP since June 2004 and of KAFA since 2006. President and Chief Executive Officer of KYN, KYE, KED and KMF since inception (KYN inception in 2004; KYE inception in 2005; KED inception in 2006 and KMF inception in 2010). Global Head of Energy at UBS Securities LLC from November 2000 to May 2004. | 4 | Current: KYN KYE KED Range Resources Corporation (oil and natural gas company) Direct Fuels Partners, L.P. (transmix refining and fuels distribution) ProPetro Services, Inc. (oilfield services) |

Prior:

Clearwater Natural Resources, LP (coal mining MLP)

International Resource Partners LP (coal mining MLP)

K-Sea Transportation Partners LP (shipping MLP)
None

| | | | |
|--|--|---|----------|
| <p>Terry A. Hart (born 1969)</p> | <p>Chief Financial Officer and Treasurer. Elected annually. Served since inception.</p> | <p>Chief Financial Officer and Treasurer of KYN and KYE since December 2005, of KED since June 2006, and of KMF since August 2010. Director of Structured Finance, Assistant Treasurer, Senior Vice President and Controller of Dynegy, Inc. from 2000 to 2005.</p> | <p>4</p> |
| <p>David J. Shladovsky (born 1960)</p> | <p>Secretary and Chief Compliance Officer. Elected annually. Served since inception.</p> | <p>Managing Director and General Counsel of KACALP since 1997 and of KAFA since 2006. Secretary and Chief Compliance Officer of KYN since 2004, of KYE since 2005, of KED since 2006 and of KMF since 2010.</p> | <p>4</p> |

Table of Contents

| Name | Position(s) | Held with the Fund, | Number of Portfolios in Fund Complex Overseen by Officer | Other Directorships Held by Officer During Past Five Years |
|-----------------------------------|--|--|---|---|
| (Year Born) | Term of Office/ Time of Service | Principal Occupations During Past Five Years | | |
| J.C. Frey (born 1968) | Executive Vice President, Assistant Treasurer and Assistant Secretary. Elected annually. Served since inception. | Senior Managing Director of KACALP since 2004 and of KAFA since 2006, and Managing Director of KACALP since 2000. Portfolio Manager of KACALP since 2000, Co-Portfolio Manager, Vice President, 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 and of KMF since August 2010. | 4 | None |
| James C. Baker (born 1972) | Executive Vice President. Elected annually. Served since inception. | Senior Managing Director of KACALP and KAFA since February 2008, Managing Director of KACALP and KAFA since December 2004 and 2006, respectively. Vice President of KYN and KYE from 2005 to 2008 and of KED from 2006 to 2008, and Executive Vice President of KYN, KYE and KED since June 2008 and of KMF since August 2010. | 4 | Current: ProPetro Services, Inc. (oilfield services) Petris Technology, Inc. (data management for energy companies) Prior: |
| Jody C. Meraz (born 1978) | Vice President. Elected annually. Served since 2011. | Senior Vice President of KACALP and KAFA since 2011. Vice President of KACALP from 2007 to 2011. Associate of KACALP and KAFA since 2005 and 2006. Vice President of KYN, KYE, KED and KMF since 2011. | 4 | K-Sea Transportation Partners LP (shipping MLP) None |

COMPENSATION DISCUSSION AND ANALYSIS

Pursuant to an investment management agreement between the Fund and KAFA (the Fund's external manager), KAFA is responsible for supervising the investments and reinvestments of the Fund's assets. KAFA, at its own expense, maintains staff and employs personnel as it determines is necessary to perform its obligations under the investment management agreement. The Fund pays various management fees to KAFA for the advisory and other services performed by KAFA under the investment management agreement.

Edgar Filing: KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC. - Form DEF 14A

The executive officers who manage the Fund's regular business are employees of Kafa or its affiliates. Accordingly, the Fund does not pay salaries, bonuses or other compensation to its executive officers. The Fund does not have employment agreements with its executive officers. The Fund does not provide pension or retirement benefits, perquisites, or other personal benefits to its executive officers. The Fund does not maintain compensation plans under which its equity securities are authorized for issuance. The Fund does not have arrangements to make payments to its executive officers upon their termination or in the event of a change in control of the Fund.

The investment management agreement for the Fund does not require Kafa to dedicate specific personnel to fulfilling its obligation to the Fund under the investment management agreement, or require Kafa personnel to dedicate a specific amount of time to the management of the Fund. In their capacities as executive officers or employees of Kafa or its affiliates, they devote such portion of their time to the Fund's affairs as required for the performance of Kafa's duties under the investment management agreement.

Table of Contents

The Fund's executive officers are compensated by Kafa. The Fund understands that Kafa takes into account the Fund's performance as a factor in determining the compensation of certain of its senior managers, and such compensation may be increased depending on the Fund's performance. In addition to compensation for services performed for the Fund, certain of the executive officers receive compensation for services performed for Kafa's various investment funds. However, Kafa cannot segregate and identify that portion of the compensation awarded to, earned by or paid to the Fund's executive officers that relates exclusively to their services to the Fund.

SECURITY OWNERSHIP OF MANAGEMENT AND CERTAIN BENEFICIAL OWNERS

The following tables set forth the number of shares of the Fund's Common Stock and Preferred Stock (as of March 31, 2012) beneficially owned by the Fund's current directors and executive officers as a group, and certain other beneficial owners, according to information furnished to the Fund by such persons. Based on statements publicly filed with the SEC and other information obtained from such persons, as of March 31, 2012, the Fund is aware of no persons who beneficially own more than 5% of its outstanding Common Stock and four persons who beneficially own more than 5% of its outstanding Preferred Stock. Beneficial ownership is determined in accordance with Rule 13d-3 under the 1934 Act and, unless indicated otherwise, includes voting or investment power with respect to the securities.

| Name of Beneficial Owner of Common Stock | Number of Shares | Percent of Class(1) |
|---|------------------|---------------------|
| Independent Directors | | |
| William R. Cordes | 1,000 | * |
| Barry R. Pearl | 4,000 | * |
| Albert L. Richey | 5,000 | * |
| William L. Thacker | 2,000 | * |
| Interested Director | | |
| Kevin S. McCarthy(2) | 20,000 | * |
| Executive Officers | | |
| Terry A. Hart | 3,000 | * |
| David J. Shladovsky | | * |
| J.C. Frey | 20,616 | * |
| James C. Baker | 22,400 | * |
| Jody C. Meraz | 2,000 | * |
| All Directors and Executive Officers as a Group (10 persons) | 80,016 | * |

* Less than 1% of class.

(1) Based on 21,755,773 shares of common stock outstanding as of March 31, 2012.

(2) Does not include 4,000 shares of the Fund's common stock held by Kafa, a subsidiary of KACALP, a limited partnership in which Mr. McCarthy is a Senior Managing Director and has ownership interests, because he may not exercise voting or investment power with respect to such shares. The Fund believes by virtue of these arrangements that Mr. McCarthy should not be deemed to have indirect beneficial ownership of such shares.

Table of Contents**Preferred Stock**

| Name of Owner of Preferred Stock | Number of Shares | Percent of Class(1) |
|---|-------------------------|----------------------------|
| All Directors and Executive Officers as a Group (10 persons) | | * |
| Babson Capital Management LLC and Affiliates 1500 Main St, Suite 2200 P.O. Box 15189 Springfield, MA 01115-5189 | 960,000 | 36.9% |
| ING Investment Management and Affiliates 5780 Powers Ferry Road NW, Suite 300 Atlanta, Georgia 30327-4347 | 600,000 | 23.1% |
| Sun Capital Advisers LLC and Affiliates One Sun Life Executive Park Wellesley Hills, MA 02481-5699 | 600,000 | 23.1% |
| AIG Asset Management 2929 Allen Parkway, Suite A36-04 Houston, TX 77019-2155 | 400,000 | 15.4% |

* Less than 1% of class.

(1) Based on 2,600,000 shares outstanding as of March 31, 2012.

The following table sets forth the dollar range of the Fund's equity securities and the aggregate dollar range of equity securities in all of the closed-end funds overseen by each director in the same Fund Complex beneficially owned by the directors of the Fund as of March 31, 2012 (beneficial ownership being determined in accordance with Rule 16a-1(a)(2) of the 1934 Act):

| Director | Dollar Range(1) of Our Equity Securities | Aggregate Dollar Range(1) of Equity Securities in Closed-End Funds Overseen by Director in Fund Complex(2) |
|------------------------------|---|---|
| Independent Directors | | |
| William R. Cordes | \$ 10,001-\$50,000 | \$ 50,001-\$100,000 |
| Barry R. Pearl | Over \$100,000 | Over \$100,000 |
| Albert L. Richey | Over \$100,000 | Over \$100,000 |
| William L. Thacker | \$ 50,001-\$100,000 | Over \$100,000 |
| Interested Director | | |
| Kevin S. McCarthy | Over \$100,000 | Over \$100,000 |

(1) Dollar ranges are as follows: none; \$1-\$10,000; \$10,001-\$50,000; \$50,001-\$100,000; over \$100,000.

Edgar Filing: KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC. - Form DEF 14A

(2) Mr. McCarthy is the only one of our directors who also serves on the Boards of Directors of KYN and KYE, both registered investment companies advised by KAFA.

As of March 31, 2012, the Independent Directors and their respective immediate family members did not own beneficially or of record any class of securities of Kayne Anderson or any person directly or indirectly controlling, controlled by, or under common control with Kayne Anderson. As of March 31, 2012, the Independent Directors did not own beneficially or of record any class of securities of the underwriters of the offerings of the Fund's Common Stock or Preferred Stock or any class of securities of any person directly or indirectly controlling, controlled by, or under common control with such underwriters.

As of March 31, 2012, certain officers and certain employees of Kayne Anderson, including all the executive officers of Fund, own, in the aggregate, approximately \$5 million of the Fund's Common Stock.

Table of Contents

SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE

Section 30(h) of the 1940 Act and Section 16(a) of the 1934 Act require the Fund's directors and executive officers, investment adviser, affiliated persons of the investment adviser and persons who own more than 10% of a registered class of the Fund's equity securities to file Section 16(a) forms with the SEC and NYSE reporting their affiliation with the Fund, their ownership and changes in their ownership of the Fund's shares. Those persons and entities are required by SEC regulations to furnish the Fund with copies of all Section 16(a) forms they file. Based solely on a review of those Section 16(a) forms furnished to it, the Fund believes that its directors and executive officers, KAFA, affiliated persons of KAFA, and any persons holding more than 10% of the Fund's Preferred Stock have complied with all applicable Section 16(a) filing requirements during the fiscal year ended November 30, 2011. To the knowledge of the Fund's management, no person owned beneficially more than 10% of the Fund's Common Stock during the fiscal year ended November 30, 2011.

Table of Contents

CORPORATE GOVERNANCE

Board Leadership Structure

The Fund's business and affairs are managed under the direction of its Board, including the duties performed for the Fund pursuant to its investment management agreement. Among other things, the Board sets broad policies for the Fund, approves the appointment of the Fund's investment adviser, administrator and officers, and approves the engagement, and reviews the performance of the Fund's independent registered public accounting firm. The role of the Board and of any individual director is one of oversight and not of management of the day-to-day affairs of the Fund.

The Board currently consists of five directors, four of whom are Independent Directors. As part of each regular Board meeting, the Independent Directors meet separately from Kayne Anderson and, as part of at least one Board meeting each year, with the Fund's Chief Compliance Officer. The Board reviews its leadership structure periodically as part of its annual self-assessment process and believes that its structure is appropriate to enable the Board to exercise its oversight of the Fund.

Under the Fund's Amended and Restated Bylaws, the Board may designate a Chairman to preside over meetings of the Board and meetings of stockholders, and to perform such other duties as may be assigned to him or her by the Board. The Fund does not have an established policy as to whether the Chairman of the Board shall be an Independent Director and believes that having the flexibility to designate its Chairman and reorganize its leadership structure from time to time is in the best interests of the Fund and its stockholders.

Presently, Mr. McCarthy serves as Chairman of the Board. Mr. McCarthy is an interested person of the Fund, as defined in the 1940 Act, by virtue of his employment relationship with Kayne Anderson. The Fund believes that Mr. McCarthy's history with the Fund, familiarity with the Kayne Anderson investment platform and extensive experience in the field of energy-related investments qualifies him to serve as the Chairman of the Board. The Board has determined that the composition of the Audit and Nominating Committees being Independent Directors only is an appropriate means to address any potential conflicts of interest that may arise from the Chairman's status as an interested person of the Fund. The Board believes that its Board leadership structure having the Chief Executive Officer serve as Chairman of the Board and Audit and Nominating Committees comprised solely of Independent Directors is the optimal structure for the Fund at this time. Because the Chief Executive Officer has the most extensive knowledge of the various aspects of the Fund's business and is directly involved in managing both the day-to-day operations and long-term strategy of the Fund, the Board has determined that Mr. McCarthy is the most qualified individual to lead the Board and serve in the key position as Chairman. The Board has also concluded that this structure allows for efficient and effective communication with the Board.

Currently, the Board does not have a designated lead Independent Director. Instead, all of the Independent Directors play an active role serving on the Board. The Independent Directors constitute a majority of the Board and are closely involved in all material deliberations related to the Fund. The Board believes that, with these practices, each Independent Director has an equal stake in the Board's actions and oversight role and equal accountability to the Fund and its stockholders.

Board Role in Risk Oversight

The Board oversees the services provided by Kayne Anderson, including certain risk management functions. Risk management is a broad concept comprised of many disparate elements (such as, for example, investment risk, issuer and counterparty risk, compliance risk, operational risk and business continuity risk). Consequently, Board oversight of different types of risks is handled in different ways, and the Board implements its risk oversight function both as a whole and through Board committees. In the course of providing oversight, the Board and its committees receive reports on the Fund's activities, including those

Table of Contents

related to the Fund's investment portfolio and its financial accounting and reporting. The Board also meets at least quarterly with the Fund's Chief Compliance Officer, who reports on the compliance of the Fund with the federal securities laws and the Fund's internal compliance policies and procedures. The meetings of the Audit Committee with the Fund's independent registered public accounting firm also contribute to Board oversight of certain internal control risks. In addition, the Board meets periodically with representatives of the Fund and Kayne Anderson to receive reports regarding the management of the Fund, including those related to certain investment and operational risks, and the Independent Directors of the Fund are encouraged to communicate directly with senior management.

The Fund believes that Board roles in risk oversight must be evaluated on a case-by-case basis and that the Board's existing role in risk oversight is appropriate. Management believes that the Fund has robust internal processes in place and a strong internal control environment to identify and manage risks. However, not all risks that may affect the Fund can be identified or processes and controls developed to eliminate or mitigate their occurrence or effects, and some risks are beyond any control of the Fund or Kayne Anderson, its affiliates or other service providers.

Diversity in Nominees for Director

The Nominating Committee evaluates candidates' qualifications for Board membership. The Nominating Committee takes into account the diversity of a particular candidate and the overall diversity of the Board when considering and evaluating candidates for Director. While the Nominating Committee has not adopted a particular definition of diversity or a particular policy with regard to the consideration of diversity in identifying candidates, when considering a candidate's and the Board's diversity, the Nominating Committee generally considers the manner in which each candidate's leadership, independence, interpersonal skills, financial acumen, integrity and professional ethics, educational and professional background, prior director or executive experience, industry knowledge, business judgment and specific experiences or expertise would compliment or benefit the Board and, as a whole, contribute to the ability of the Board to oversee the Fund. The Nominating Committee may also consider other factors or attributes as it may determine appropriate in its judgment. The Nominating Committee believes that the significance of each candidate's background, experience, qualifications, attributes or skills must be considered in the context of the Board as a whole. As a result, the Nominating Committee has not established any litmus test or quota relating to diversity that must be satisfied before an individual may serve as a director. The Board believes that Board effectiveness is best evaluated at a group level, through its annual self-assessment process. Through this process, the Board considers whether the Board as a whole has an appropriate level of sophistication, skill and business acumen and the appropriate range of experience and background.

Communications Between Stockholders and the Board of Directors

Stockholders may send communications to the Board. Communications should be addressed to the Secretary of the Fund at 717 Texas Avenue, Suite 3100, Houston, TX 77002. The Secretary of the Fund will forward any communications received directly to the Board.

Code of Ethics

The Fund has adopted a code of ethics, as required by federal securities laws, which applies to, among others, its directors and officers. A text-only version of the Fund's code of ethics is available on the EDGAR Database on the SEC's internet web site at www.sec.gov. In addition, copies of the code of ethics may be obtained from the Fund free of charge at (877) 657-3863.

Table of Contents

OTHER MATTERS

The Board knows of no other matters that are intended to be brought before the meeting. If other matters are properly presented at the Annual Meeting, the proxies named in the enclosed form of proxy will vote on those matters in their sole discretion.

MORE INFORMATION ABOUT THE MEETING

Outstanding Stock

At the Record Date, the Fund had the following numbers of shares of stock issued and outstanding:

| Class of Stock | Shares Outstanding |
|-----------------------|---------------------------|
| Common Stock | 21,755,773 |
| Preferred Stock | 2,600,000 |

To the knowledge of the Fund's management:

As of March 31, 2012, no persons held beneficially more than 5% of the Fund's outstanding Common Stock.

As of March 31, 2012, four persons held beneficially more than 5% of the Fund's outstanding Preferred Stock.

As of March 31, 2012, none of our directors owned 1% or more of the Fund's outstanding Common Stock.

As of March 31, 2012, none of our directors owned 1% or more of the Fund's outstanding Preferred Stock.

As of March 31, 2012, officers and directors of the Fund owned, as a group, less than 1% of the Fund's outstanding Common Stock.

As of March 31, 2012, directors and officers of the Fund owned, as a group, less than 1% of the Fund's outstanding Preferred Stock.

How Proxies Will Be Voted

All proxies solicited by the Board of Directors that are properly executed and received at or prior to the Annual Meeting, and that are not revoked, will be voted at the Annual Meeting. Votes will be cast in accordance with the instructions marked on the enclosed proxy card. If no instructions are specified, the persons named as proxies will cast such votes in accordance with the Board's recommendations. The Fund knows of no other matters to be presented at the Annual Meeting. However, if other proposals are properly presented at the Annual Meeting, the votes entitled to be cast by the persons named as proxies on the enclosed proxy card will cast such votes in their sole discretion.

How to Vote

If your shares are held in Street Name by a broker or bank, you will receive information regarding how to instruct your bank or broker to cast your votes. If you are a stockholder of record, you may authorize the persons named as proxies on the enclosed proxy card to cast the votes you are entitled to cast at the meeting by completing, signing, dating and returning the enclosed proxy card. Stockholders of record or their duly authorized proxies may vote in person at the Annual Meeting. However, even if you plan to attend the Annual Meeting, you should still return your proxy card, which will ensure that your vote is cast should your plans change.

Table of Contents

Expenses and Solicitation of Proxies

The expenses of preparing, printing and mailing the enclosed proxy card, the accompanying notice and this proxy statement, tabulation expenses and all other costs in connection with the solicitation of proxies will be borne by the Fund. The Fund may also reimburse banks, brokers and others for their reasonable expenses in forwarding proxy solicitation material to the beneficial owners of the Fund's shares. In order to obtain the necessary quorum at the meeting, additional solicitation may be made by mail, telephone, telegraph, facsimile or personal interview by the Fund's representatives, Kayne Anderson, the Fund's transfer agent, or by brokers or their representatives or by a solicitation firm that may be engaged by the Fund to assist in proxy solicitations. If a proxy solicitor is retained by the Fund, the costs associated with all proxy solicitation are expected to be approximately \$5,000. The Fund will not pay any of its representatives or Kayne Anderson any additional compensation for their efforts to supplement proxy solicitation.

Dissenters or Appraisal Rights

Stockholders do not have dissenters or appraisal rights.

Revoking a Proxy

At any time before it has been voted, you may revoke your proxy by: (1) sending a letter revoking your proxy to the Secretary of the Fund at 717 Texas Avenue, Suite 3100, Houston, TX 77002; (2) properly executing and sending a later-dated proxy to the Secretary of the Fund at the same address; or (3) attending the Annual Meeting, requesting return of any previously delivered proxy, and voting in person.

Broker Non-Votes

Broker non-votes occur when a beneficial owner of shares held in street name does not give instructions to the broker holding the shares as to how to vote on matters deemed non-routine. Generally, if shares are held in street name, the beneficial owner of the shares is entitled to give voting instructions to the broker holding the shares. If the beneficial owner does not provide voting instructions, the broker can still vote the shares with respect to matters that are considered to be routine, but cannot vote the shares with respect to non-routine matters. Under the rules and interpretations of the NYSE, non-routine matters are generally matters that may substantially affect the rights or privileges of stockholders. The ratification of the selection of the independent registered public accounting firm is generally considered to be routine, and brokers generally have discretionary voting power with respect to such proposal.

Quorum and Adjournment

The presence, in person or by proxy, of holders of shares entitled to cast a majority of the votes entitled to be cast (without regard to class) constitutes a quorum for the purposes of the Annual Meeting. Abstentions and broker non-votes will be counted for purposes of determining whether a quorum is present at the Annual Meeting. If a quorum is not present in person or by proxy at the Annual Meeting, the chairman of the Annual Meeting may adjourn the meeting to a date not more than 120 days after the original Record Date without notice other than announcement at the Annual Meeting.

INVESTMENT ADVISER

KA Fund Advisors, LLC is the investment adviser for the Fund. Its principal office is located at 717 Texas Avenue, Suite 3100, Houston, TX 77002.

Table of Contents

ADMINISTRATOR

Ultimus Fund Solutions, LLC (the Administrator) provides certain administrative services for the Fund, including but not limited to preparing and maintaining books, records, and tax and financial reports, and monitoring compliance with regulatory requirements. The Administrator is located at 225 Pictoria Drive, Suite 450, Cincinnati, OH 45246.

HOUSEHOLDING OF PROXY MATERIALS

The SEC has adopted rules that permit companies and intermediaries (e.g. brokers) to satisfy the delivery requirements for proxy statements and annual reports with respect to two or more stockholders sharing the same address by delivering a single proxy statement and annual report addressed to those stockholders. This process, which is commonly referred to as householding, potentially means extra convenience for stockholders and cost savings for companies.

This year, a number of brokers with account holders who are the Fund's stockholders will be householding its proxy materials. These brokers will deliver a single copy of the proxy statement and other proxy materials to multiple stockholders sharing an address unless the brokers have received contrary instructions from the affected stockholders. If you have received notice from your broker that it will be householding communications to your address, householding will continue until you are notified otherwise or until you revoke your consent. If, at any time, you no longer wish to participate in householding and would prefer to receive a separate copy of proxy materials and annual report, please notify your broker. Stockholders of the Fund sharing an address who currently receive multiple copies of proxy materials and annual report of the Fund at the same addresses and would like to request householding of their communications should contact their brokers.

Table of Contents

STOCKHOLDER PROPOSALS

The Amended and Restated Bylaws currently in effect for the Fund provide that in order for a stockholder to nominate a candidate for election as a director at an annual meeting of stockholders or propose business for consideration at such meeting, which nomination or proposal is not to be included in the Fund's proxy statement, written notice containing the information required by the current Bylaws must be delivered to the Secretary of the Fund at 717 Texas Avenue, Suite 3100, Houston, TX 77002, not later than 5:00 p.m. Central Time on the 120th day, and not earlier than the 150th day, prior to the first anniversary of the date of mailing of the notice for the preceding year's annual meeting; *provided, however* that in the event that the date of the annual meeting is advanced or delayed by more than 30 days from the first anniversary of the date of the preceding year's annual meeting (and in the case of the first annual meeting of stockholders), notice by the stockholder to be timely must be so delivered not earlier than the 150th day prior to the date of such annual meeting and not later than 5:00 p.m. Central Time on the later of the 120th day prior to the date of such annual meeting or the tenth day following the day on which public announcement of the date of such meeting is first made.

Accordingly, a stockholder nomination or proposal for the Fund intended to be considered at the 2013 Annual Meeting must be received by the Secretary of the Fund on or after December 26, 2012 and prior to 5:00 p.m. Central Time on January 24, 2013. However, under the rules of the SEC, if a stockholder wishes to submit a proposal for possible inclusion in the 2013 proxy statement pursuant to Rule 14a-8(e) of the 1934 Act, the Fund must receive it not less than 120 calendar days before the anniversary of the date the proxy statement was released to stockholders for the previous year's annual meeting. Accordingly, a stockholder's proposal under Rule 14a-8(e) must be received by the Fund on or before January 24, 2013 in order to be included in the proxy statement and proxy card for the 2013 Annual Meeting. All nominations and proposals must be in writing.

By Order of the Board of Directors

David J. Shladovsky

Secretary

May 17, 2012

Table of Contents

PROXY

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

PROXY SOLICITED BY THE BOARD OF DIRECTORS FOR

THE 2012 ANNUAL MEETING OF STOCKHOLDERS JUNE 28, 2012

The undersigned stockholder of Kayne Anderson Midstream/Energy Fund, Inc., a Maryland corporation (the Fund), hereby appoints David J. Shladovsky and James C. Baker, or either of them, as proxies for the undersigned, with full power of substitution in each of them, to attend the 2012 Annual Meeting of Stockholders of the Fund (the Annual Meeting) to be held at 717 Texas Avenue, Suite 3100, Houston, TX 77002, on June 28, 2012, at 8:00 a.m. Central Time and any adjournment or postponement thereof, to cast on behalf of the undersigned all votes that the undersigned is entitled to cast at such Annual Meeting and otherwise to represent the undersigned at the Annual Meeting with all powers possessed by the undersigned if personally present at the Annual Meeting. The undersigned hereby acknowledges receipt of the Notice of the Annual Meeting and the accompanying Proxy Statement, the terms of each of which are incorporated by reference, and revokes any proxy heretofore given with respect to such Annual Meeting.

If this Proxy is properly executed, the votes entitled to be cast by the undersigned will be cast as instructed below, or if no instruction is given, the votes entitled to be cast by the undersigned will be cast for each of the proposals. Additionally, the votes entitled to be cast by the undersigned will be cast in the discretion of the Proxy holder on any other matter that may properly come before the Annual Meeting or any adjournment or postponement thereof.

YOUR VOTE IS IMPORTANT. PLEASE MARK, SIGN, DATE AND RETURN THIS

PROXY PROMPTLY USING THE ENCLOSED POSTMARKED ENVELOPE.

PLEASE DETACH AT PERFORATION BEFORE MAILING

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

ANNUAL MEETING PROXY CARD

AUTHORIZED SIGNATURES

THIS SECTION MUST BE COMPLETED

Please sign exactly as your name appears. If the shares are held jointly, each holder should sign. When signing as an attorney, executor, administrator, trustee, guardian, officer of a corporation or other entity or in another representative capacity, please indicate your full title under signature(s).

Signature Date

Signature(s)(if held jointly): Date
(continued from reverse side)

Table of Contents

PROXY

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

ANNUAL MEETING PROXY CARD

THIS PROXY, WHEN PROPERLY EXECUTED, WILL BE VOTED IN THE MANNER DIRECTED BELOW OR, IF NO CHOICE IS INDICATED, WILL BE VOTED FOR EACH PROPOSAL.

1. THE ELECTION OF TWO CLASS II DIRECTORS FOR TERMS OF THREE YEARS AND UNTIL THEIR SUCCESSORS ARE ELECTED AND QUALIFIED.

“ FOR THE NOMINEE LISTED BELOW
NOMINEE: BARRY R. PEARL

“ WITHHOLD FROM THE NOMINEE LISTED BELOW

“ FOR THE NOMINEE LISTED BELOW
NOMINEE: WILLIAM L. THACKER

“ WITHHOLD FROM THE NOMINEE LISTED BELOW

2. THE RATIFICATION OF THE SELECTION OF PRICEWATERHOUSECOOPERS LLP AS THE FUND'S INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING NOVEMBER 30, 2012.

“ FOR

“ AGAINST

“ ABSTAIN

3. THE APPROVAL OF A PROPOSAL TO AUTHORIZE THE FUND TO SELL SHARES OF ITS COMMON STOCK AT A NET PRICE BELOW THE NET ASSET VALUE PER SHARE, SUBJECT TO THE GROSS PRICE (BEFORE UNDERWRITING FEES, COMMISSIONS AND OFFERING EXPENSES) BEING GREATER THAN THE NET ASSET VALUE PER SHARE.

“ FOR

“ AGAINST

“ ABSTAIN

4. TO VOTE AND OTHERWISE REPRESENT THE UNDERSIGNED ON ANY OTHER MATTER THAT MAY PROPERLY COME BEFORE THE MEETING OR ANY ADJOURNMENT OR POSTPONEMENT THEREOF IN THE DISCRETION OF THE PROXY HOLDER.

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:

The proxy statement and the Fund's most recent Annual Report are available

on the internet at www.kaynefunds.com/kmf/sec-filings/.