

Kayne Anderson Midstream/Energy Fund Prices a Private Placement of \$30 Million of Notes and \$40 Million of Mandatory Redeemable Preferred Shares

Houston, TX – April 14, 2014 – Kayne Anderson Midstream Energy Fund, Inc. (the “Fund”) (NYSE: KMF) announced today that it has reached a conditional agreement with institutional investors relating to a private placement of \$30 million of unsecured notes (“Notes”) and \$40 million of Mandatory Redeemable Preferred Shares (“Series C MRP Shares”). Net proceeds from such offerings will be used to refinance existing indebtedness, to make new portfolio investments and for general corporate purposes. The private placement is expected to close on April 30, 2014. The closing is subject to investor due diligence, legal documentation and other standard closing conditions.

The table below sets forth the key terms of the Notes and the MRPS:

Security	Amount (\$ in millions)	Rate	Maturity
Series E Notes	\$30	3.46%	July 30, 2021
Series C MRP Shares	\$40	4.06%	July 30, 2021

Neither the Notes nor the Series C MRP Shares will be registered under the Securities Act of 1933, and neither may be offered or sold in the United States absent registration or an applicable exemption from registration.

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Kayne Anderson Midstream/Energy Fund, Inc. is a non-diversified, closed-end management investment company registered under the Investment Company Act of 1940, whose common stock is traded on the New York Stock Exchange. The Fund's investment objective is to provide a high level of total return with an emphasis on making quarterly cash distributions to its stockholders by investing at least 80% of its total assets in securities of companies in the Midstream/Energy Sector, consisting of: (a) Midstream Master Limited Partnerships (“MLPs”), (b) Midstream Companies, (c) Other MLPs and (d) Other Energy Companies. The Fund anticipates that the majority of its investments will consist of investments in Midstream MLPs and Midstream Companies. See Glossary of Key Terms on page ii of the Prospectus for definitions of certain key terms.

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

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