Kayne Anderson

NextGen Energy & Infrastructure, Inc.



October 2, 2023

Dear Fellow Stockholders:

This quarterly update discusses the energy infrastructure markets, KMF's portfolio, and the Fund's year-to-date performance. While there is much uncertainty in the financial markets and competing narratives on the path forward for the economy, we believe the Fund's investments are well positioned to generate compelling risk-adjusted returns for the next several years. Further, KMF's balance sheet provides the Fund with flexibility to quickly adapt to changing market conditions. As it relates to fiscal Q3:

- KMF's Net Asset Return for fiscal Q3 was 8.3%; for the first nine months of fiscal 2023 the Fund's Net Asset Return was negative 5.3%;⁽¹⁾
- KMF meaningfully outperformed its benchmark during the quarter (580 basis points of outperformance);⁽²⁾⁽³⁾
- KMF's portfolio benefited from a constructive backdrop for the energy sector and the Fund's midstream investments continue to generate significant free cash flow; and
- KMF maintained conservative leverage levels with ample downside cushion⁽⁴⁾

KYN & KMF Proposed Merger

Kayne Anderson Energy Infrastructure Fund, Inc. (NYSE: KYN) and KMF announced plans to combine the two funds earlier this year (the "Merger"), with KYN as the surviving entity. The definitive joint proxy statement/prospectus containing information about the Merger is now on file and available at SEC.gov, and the special meeting of stockholders to approve the Merger is scheduled for November 1st. Please also refer to kaynefunds.com/insights for information on the Merger. (5)

Market Conditions

While the major U.S. equity indices have generated positive returns, fiscal 2023 has been a volatile year in the financial markets. Examples include the regional banking crisis during the spring, the political brinkmanship over the federal debt ceiling in May and, more recently, the rapid increase in interest rates (as measured by yields on U.S. Treasury bonds) in response to the Federal Reserve reiterating its commitment to keeping interest rates "higher for longer." These events, in turn, have caused meaningful swings in stock prices. We expect this volatility to continue and, as a result, we have reduced leverage in response to these market conditions. Put simply, there is much uncertainty in the financial markets, and we do not expect this to change any time soon.

For instance, the state of the global economy remains a subject of much debate. Economic activity in the U.S. has been resilient thus far in fiscal 2023, and many economists are optimistic about the prospects for a "soft landing" in the domestic economy. We too are optimistic, but we readily acknowledge this outcome is far from certain. Further, we believe that there is a higher-than-normal probability of meaningful stock price volatility as the market digests new economic data points and the resulting implications for the economy. Our goal is to best position the Fund to withstand this volatility while at the same time capitalizing on our bullish outlook for the energy infrastructure sector.

Fiscal Q3 exhibited broad-based strength across sectors on solid earnings and positive inflation trends, though pockets of the market sold off on rising interest rates.

| Total Return | | | | | | | | |
|----------------------------|---------|------|--------|--------------------|---------------------|---------------------|---------------------|--|
| | S&P 500 | DJIA | NASDAQ | XLE ⁽⁷⁾ | AMNA ⁽⁸⁾ | KRII ⁽⁹⁾ | XLU ⁽¹⁰⁾ | |
| Fiscal Q3 2023 | 8.3% | 6.1% | 8.7% | 17.1% | 10.4% | -7.5% | -2.2% | |
| Fiscal 2023 ⁽⁶⁾ | 11.9% | 2.0% | 23.2% | 0.5% | 1.3% | -12.1% | -9.8% | |

The energy sector (including energy infrastructure) enjoyed a very strong fiscal Q3. This is in contrast to

the first six months of fiscal 2023, where weak stock price performance for energy companies did not reflect the companies' solid financial and operating results. Importantly, nothing has changed in the midstream sector's fundamentals to alter our constructive outlook; we continue to believe that consistent operating results, commitment to returning capital to investors, and steady growing dividends will prove to be a winning formula over time.

Fiscal Q3 was an active quarter in the capital markets for the midstream sector. Kodiak Gas Services (NYSE: KGS) completed the first midstream IPO since 2021. Additionally, NuStar Energy, Gibson Energy and Hess Midstream completed equity offerings during the quarter for aggregate proceeds of approximately \$660 million. The midstream sector is very different from five years ago, and companies are no longer reliant on the capital markets to finance their growth projects. Nonetheless, we view these recent deals as an encouraging sign – investors are willing to allocate incremental capital to the sector.

Crude oil prices were up 23% in fiscal Q3, with WTI ending the quarter at ~\$84 per barrel as global liquids demand reached record highs. In the weeks following quarter-end, supportive global inventory data and OPEC+ production restraint have driven spot prices in excess of \$90 per barrel, introducing renewed focus on higher gasoline and diesel prices (and the associated implications for the domestic economy). Slower-than-expected Chinese demand growth, growing crude supply from the Americas (including emerging sources like Guyana), and significant Saudi spare capacity lead us to believe a sustained rally in excess of \$100 per barrel is unlikely. However, we do believe that crude oil prices are likely to remain above \$75 (barring an unexpected shift in OPEC+ policy). The combination of lower volatility in crude oil prices and measured domestic production growth provides a very constructive backdrop for our midstream investments.

The natural gas market also rebounded nicely during the quarter. After trading for several months near \$2.00 per MMBtu, Henry Hub natural gas prices have recovered to a range of \$2.50 to \$2.80 per MMBtu. Reduced drilling in response to these low prices has begun to dampen the rate of supply growth, and an extremely warm summer in the U.S. is driving record levels of gas-fired power generation (~37 Bcf/d of demand)⁽¹¹⁾. The prices for natural gas in the futures market remain much higher at ~\$3.60 per MMBtu in 2024 and above \$4.00 in 2025. European and Asian gas prices spiked again during the quarter in response to potential strikes at Australian liquefied natural gas ("LNG") production facilities, while U.S. LNG exports remain very strong (~11.5 Bcf/d, or virtually 100% utilization)⁽¹²⁾. Our outlook for North American natural gas consumption and LNG exports remains very constructive.

Portfolio and Performance

As has been the case for most of fiscal 2023, there was a large divergence during fiscal Q3 in performance between the midstream sector and the renewable and utilities sectors. Midstream equities were up meaningfully during the quarter, while higher interest rates and less accommodative capital markets have weighed on renewables and utilities equities. While we remain constructive on the fundamental longer-term outlook for U.S. utilities and renewables, the current market backdrop has us cautious in the near-term, and we have positioned the Fund's portfolio accordingly.

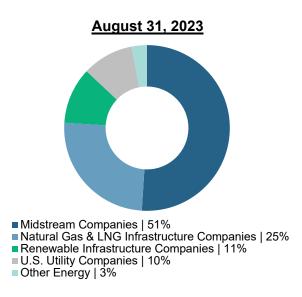
| Comparison of | Returns in | Fiscal (| Q3 2023 |
|---------------|------------|----------|---------|
|---------------|------------|----------|---------|

| KMF Net Asset Return ⁽¹⁾ | 8.3% |
|-----------------------------------------|-------|
| KMF Benchmark ⁽³⁾ | 2.5% |
| Midstream ⁽⁸⁾⁽¹³⁾ | 10.4% |
| Renewable Infrastructure ⁽⁹⁾ | -7.5% |
| U.S. Utilities ⁽¹⁰⁾ | -2.2% |

KMF generated a total Net Asset Return of 8.3% in fiscal Q3, its best quarter since the second quarter of fiscal 2022. KMF's Market Return, which is based on stock price performance rather than Net Asset Value, was 11.6% for fiscal Q3.⁽¹⁴⁾ This exceeded our Net Asset Return as our stock price traded at a 15.2% discount to NAV as of August 31st compared to a 17.7% discount at the beginning of the fiscal quarter.

While our near-term outlook for energy infrastructure is nuanced, our intermediate to longer-term outlook is positive for each subsector. In the current environment, we continue to favor companies that are funding capital spending from internally generated cash flow or have minimal external financial needs. We are also favoring companies that have strong balance sheets and manageable exposure to floating interest rates and near-term debt maturities. During fiscal Q3, we continued to increase KMF's exposure to the midstream sector and decrease the Fund's exposure to renewable infrastructure and utilities. As of August 31st, midstream investments represented 76% of the Fund's portfolio (66% of the portfolio at the end of fiscal 2022).

We believe midstream companies are better positioned to deal with near-term macroeconomic headwinds associated with higher interest rates and benefit from the tailwind of domestic oil and gas production growth. We are bullish on the longer-term outlook for renewable infrastructure and utilities – these sectors are poised to benefit from the energy transition. That said, the near-term outlook for these sectors is more challenging – there are a host of other income-oriented alternatives for investors given the higher interest rate environment, and these companies (most of which are not generating free cash flow) are faced with the challenge of efficiently financing their growth projects in the near term.



Distribution & Outlook

KMF recently announced a 16 cent per share distribution to be paid to investors in early October. As a reminder, once the combination with KYN is completed, we intend to recommend an additional one cent per share increase in KYN's quarterly distribution rate (to \$0.22 per share). KMF stockholders' distribution is estimated to increase by approximately 17% once the combination is completed (on a pro forma basis).⁽¹⁵⁾

We encourage investors to visit our website at kaynefunds.com for more information about the Fund, including the commentary posted on the "Insights" page that discuss performance, key industry trends, and the Merger. We appreciate your investment in KMF and look forward to providing future updates.

KA Fund Advisors, LLC

- (1) Net Asset Return is defined as the change in net asset value per share plus cash distributions paid during the period (assuming reinvestment through our dividend reinvestment plan).
- (2) Relative performance based on the difference between the Fund's Net Asset Return and the total return of KMF's Benchmark.
- (3) KMF's Benchmark is a composite of energy infrastructure companies. For fiscal 2023, this composite is comprised of a 50% weighting to the midstream sector, a 30% weighting to the renewable infrastructure sector, and a 20% weighting to the U.S. utility sector. The subsector allocations for this composite were established by Kayne Anderson at the beginning of fiscal 2023 based on the estimated target subsector allocations of the Fund's assets over the intermediate term. KMF's portfolio holdings and/or subsector allocations may change at any time.
- (4) Downside cushion reflects the decrease in total asset value that could be sustained while maintaining compliance with 1940 Act leverage levels and KMF's financial covenants.
- (5) More information on the Merger is available in the definitive joint proxy statement/prospectus filed with the Securities and Exchange Commission (SEC). All relevant documents are available at no charge on the SEC website at www.sec.gov. Please refer to kaynefunds.com/insights for additional information on the combination.
- (6) Fiscal year-to-date 2023 (11/30/22 8/31/23).
- (7) The benchmark for the broad U.S. energy sector is the Energy Select Sector SPDR Fund (XLE), which is an exchange-traded fund ("ETF") linked to the Energy Select Sector Index (IXE), a subset of the S&P 500.
- (8) The benchmark for the midstream sector is the Alerian Midstream Energy Index (AMNA).
- (9) The benchmark for the renewable infrastructure sector is the Kayne Anderson Renewable Infrastructure Index (KRII), a market-cap weighted index of 35 domestic and international renewable infrastructure companies with individual constituents capped at a 5% weighting.
- (10) The benchmark for the U.S. utility sector is the Utilities Select Sector SPDR Fund (XLU), which is an exchange-traded fund ("ETF") linked to the Utilities Select Sector Index (IXU), a subset of the S&P 500.
- (11) Source: TPH&Co. Research, Bloomberg.
- (12) Source: Reuters/Refinitiv.
- (13) Whenever we reference "midstream companies", the "midstream sector" or the "midstream industry" it includes both traditional midstream companies and natural gas & LNG infrastructure companies. Traditional midstream companies are defined as midstream companies that own and/or operate midstream assets related to crude oil, refined products, natural gas liquids or water. Natural gas & LNG infrastructure companies are defined as midstream companies that primarily own and/or operate midstream assets related to natural gas or liquefied natural gas.
- (14) Market Return is defined as the change in share price plus cash distributions paid during the period (assuming reinvestment through our dividend reinvestment program).
- (15) Estimate based on (i) the implied exchange ratio of 0.854 shares of KYN for each share of KMF (based on per share NAVs as of August 31, 2023) and (ii) a 22 cent per share quarterly distribution rate for KYN once the Merger closes. The exchange ratio will be based on the relative per share NAVs of each fund the business day prior to the Merger's closing date. The proposed increase in KMF's distribution level is not certain, as payment of future distributions is subject to KYN's Board of Directors approval, as well as meeting the covenants of KYN's debt agreements and terms of its preferred stock. There can be no guarantee that the KYN quarterly distribution will ultimately increase (due to changes in market conditions or otherwise) or that it would not subsequently decrease.

DISCLAIMER & RISK CONSIDERATIONS

All investments involve risk, including possible loss of principal. An investment in the fund could suffer loss. Closed-end funds, unlike open-end funds, are not continuously offered. After the initial public offering, shares are sold on the open market through a stock exchange. As with any other stock, total return and market value will fluctuate so that an investment, when sold, may be worth more or less than its original cost. Shares of closed-end funds frequently trade at a market price that is below their net asset value.

Kayne Anderson NextGen Energy & Infrastructure, Inc. (NYSE: KMF) is a non-diversified, closed-end management investment company registered under the Investment Company Act of 1940, as amended, whose common stock is traded on the NYSE. The fund's investment objective is to provide a high level of total return with an emphasis on making cash distributions to its stockholders. The fund seeks to achieve its investment objective by investing at least 80% of its total assets in securities of Energy Companies and Infrastructure Companies. The fund anticipates that the majority of its investments will consist of investments in "NextGen" companies, which we define as Energy Companies and Infrastructure Companies that are meaningfully participating in, or benefiting from, the Energy Transition. See Glossary of Key Terms in the fund's most recent quarterly report for a description of these investment categories and the meaning of capitalized terms.

This communication contains statements reflecting assumptions, expectations, projections, intentions, or beliefs about future events. These and other statements not relating strictly to historical or current facts constitute forward-looking statements as defined under the U.S. federal securities laws. Forward-looking statements involve a variety of risks and uncertainties. These risks include, but are not limited to, changes in economic and political conditions; regulatory and legal changes; energy industry risk; leverage risk; valuation risk; interest rate risk; tax risk; and other risks discussed in detail in the Company's filings with the Securities and Exchange Commission ("SEC"), available at www.kaynefunds.com or www.sec.gov. Actual events could differ materially from these statements or from our present expectations or projections. You should not place undue reliance on forward-looking statements, which speak only as of the date they are made. Kayne Anderson undertakes no obligation to publicly update or revise any forward-looking statements made herein. There is no assurance that the Company's investment objectives will be attained.

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