ELIZABETH A. PEARCE
STATE TREASURER

RETIREMENT DIVISION
TEL: (802) 828-2305
FAX: (802) 828-5182

UNCLAIMED PROPERTY DIVISION
TEL: (802) 828-2407

ACCOUNTING DIVISION
TEL: (802) 828-2301
FAX: (802) 828-2884

STATE OF VERMONT
OFFICE OF THE STATE TREASURER

To: Vermont Pension Investment Committee

From: Matt Considine, CFA, Director of Investments
Katie Green, Investments Manager
Nick Foss, Investments Analyst

Subject: Fossil-fuel Divestment Analysis

Date: July 28, 2015

Executive Summary

The VPIC asked Treasurer's Office Staff ("Staff") at the May 26, 2015 regular VPIC meeting to provide information on the extent of coal holdings in the VPIC portfolio. An additional request to re-examine the issue of fossil-fuel/energy sector divestment and evaluate how managers are incorporating climate change concerns into their investment processes was made at the June 23, 2015 regular VPIC meeting as well. This memo addresses those requests and also takes the opportunity to update the February 20, 2013 analysis provided to the Committee regarding issues associated with fossil-fuel/energy divestment. Staff has evaluated the requested initiatives in accordance with VPIC's Environmental, Social and Governance Initiatives policy which was adopted by the VPIC "for evaluating opportunities to either make or divest from investments for the purpose of achieving certain environmental, social or governance ("ESG") goals that do not appear to be primarily investment related …" Accordingly, Staff has considered the following:

1. Clarity of the proposed ESG initiative and its parameters and goals.
2. The impact of divestment on the return and risk characteristics of the VPIC portfolio;
3. Costs of the ESG initiative and impact of the implementation on time and resources;
4. Governance considerations; and
5. Benefits of ESG initiative.

Staff recommends that proposals for fossil-fuel/energy divestment be rejected. Staff believes that analysis demonstrates that such divestment fails to satisfy the criteria set forth in the

VPIC ESG[1] policy, presents significant governance challenges, and is not in the best interests of the pension beneficiaries.

1. Clarity of proposed ESG initiative and its parameters and goals

The various divestment proposals fail to specify a reliable resource for purposes of identifying the scope of the initiative. The June 23, 2015 VPIC discussion of divestment encompassed holdings in the energy sector as a whole, as well as coal specifically. A variety of company classification approaches are available, with "GICS" being one of the most widely accepted industry-assignment schemes. The "Carbon Tracker" list has also been proposed, although there is nothing to Staff's knowledge to suggest that it is necessarily the most accurate list. For the purpose of this analysis Staff used Global Industry Classification Standard "GICS"[2] for the purpose of analyzing the separate account portion of the VPIC portfolio, as well as an interpretation of a list published in November 2014 by carbontracker.org as the Carbon Tracker 200 list. Staff notes that, there are other lists (e.g. the PERI 100 Greenhouse list, maintained by the Political Economy Research Institute at UMass/Amherst) which are substantively different. An inability to distinguish narrowly defined activities (e.g. biodiesel, renewables) further complicates the screening process, as does the multi-industry membership of many companies (notably, utility companies with energy exposure and vice versa)[3]. In this analysis, the energy sector classification is used interchangeably with the "fossil fuels" sector.

The various fossil-fuel/energy divestment (hereafter, "divestment") proposals fail to distinguish between common shares and other forms of investable securities (e.g. debt securities, derivatives, futures) which may be otherwise permitted in an Investment Manager's investing guidelines. On the assumption that it would be inconsistent to divest from only one class of security, this report assesses the overall VPIC portfolio.

The various divestment proposals also fail to distinguish between separate and commingled accounts. On the assumption that it would be inconsistent to expect that commingled accounts would be excluded, this report includes that portion of the VPIC portfolio in the analysis. Commingled account exposure is based on estimates and manager feedback.

Additionally, the various divestment proposals fail to distinguish between being "long" securities versus being "short" securities. It would be an unprecedented override of delegated investment advisory responsibility to assume that only shorting energy sector securities is permitted. This report assumes that no distinction is made among strategies and their ability to be either "long" or "short" securities.

---

[1] More on legislative activity, portfolio background and the ESG policy may be found in Appendix I and II

[2] A classification scheme developed jointly by Morgan Stanley and Standard & Poor's :
https://en.wikipedia.org/wiki/Global_Industry_Classification_Standard
https://www.msci.com/gics
http://www.spindices.com/documents/index-policies/methodology-gics.pdf

[3] It is worth noting here that assertions by 350Vermont "that ALL of Vermont's energy sector investments are in fossil fuels" are incorrect, ignoring holdings in solar-related companies, companies with portions of their business related to renewables, etc.

Finally, the various proposals for divestment have failed to articulate any quantifiable or otherwise measurable benefits. Instead, divestment is presented as a tactic to "politically bankrupt"[4] specific companies. As such, Staff has been unable to determine any meaningful impact from the initiative, such as actual reductions in production or consumption of fossil-fuels, or any change in behavior created from VPIC's *not* owning a security.

Staff recommends against divestment as the ambiguity of the initiative and the lack of demonstrable benefit are in conflict with the VPIC ESG policy's requirement for clarity of purpose and need for a measurable benefit.

2. Impact of divestment on the return and risk characteristics of the VPIC portfolio

A. Energy allocation in separate accounts of the VPIC portfolio

The profile of the energy and utility holdings (as identified by GICS codes) in the separate accounts in the VPIC portfolio as of June 30, 2015:

*Dollar Exposure **	Energy (ex Coal)	Coal	Utilities	Total
Common shares	$48,724,985	$241,887	$21,827,821	$70,794,693
Bonds, etc	$17,551,799	$1,206,375	$8,683,052	$27,441,226
Total	$66,276,784	$1,448,262	$30,510,873	$98,235,919
Total	1.7%	0.0%	0.8%	2.5%

The profile of the energy and utility holdings (as identified by Staff's interpretation of the Carbon Tracker list) in the separate accounts in the VPIC portfolio as of June 30, 2015:

*Dollar Exposure **	Carbon Tracker Oil**	Carbon Tracker Coal**
Common shares	$32,501,222	$4,211,841
Bonds, etc	$6,105,277	$1,763,300
Total	$38,606,499	$5,975,141
Total	1.0%	0.2%

** Estimated total VPIC exposure, as of 6/30/2015. Separate accounts comprise approximately 35% of total VPIC assets.*

*** There may be some overlap between the two lists due to the manner in which they are constructed*

---

[4] From
http://www.npr.org/2015/04/11/398757780/students-push-college-fossil-fuel-divestment-to-stigmatize-industry

"That stigma is key. Climate change activist Bill McKibben, who visited Swarthmore on day eight of the sit-in, explained that divestment isn't meant to stop the flow of cash to well-capitalized energy companies.

"**No one's under the illusion that if Swarthmore or any other college sells its shares in Exxon, that will immediately bankrupt Exxon,**" he says. "**What it will do is begin the process, further the process, of politically bankrupting them.**"" (emphasis added)

The table below provides an estimated breakdown of the VPIC portfolio's commingled accounts' energy-related holdings, according to estimates provided by the relevant investment managers and extrapolation of index exposure. The estimated additional contribution to VPIC portfolio exposure is $165,186,016 (4.2%):

VPIC Investment Manager	$ Exposure to Fossil Fuel Industry
VPIC SSGA S+P 500 CAP WT	$35,423,334
VPIC AQR (Global Asset Allocation)	$32,973,484
VPIC GROSVENOR (Hedge Fund-of-Funds)	$20,355,756
VPIC PIMCO ALL ASSET (Global Asset Allocation)	$19,133,184
VPIC ABERDEEN (International Equities)	$14,234,120
VPIC SSGA ACWI EX US INDEX	$12,695,883
VPIC ALLIANZ (Domestic Fixed Income)	$11,312,836
VPIC WELLINGTON EMERGING DEBT (Emerging Mkt)	$4,683,517
VPIC SCHRODER (COMMODITIES)	$3,787,170
VPIC SSGA U.S. AGGREGATE BOND	$3,230,134
VPIC MELLON ALPHA (Global Asset Allocation)	$2,634,045
VPIC SSGA S&P 400 MIDCAP (Domestic Mid Cap Equity)	$2,412,325
VPIC GAM UNCONSTRAINED	$2,265,098
VPIC HARBOURVEST	$1,682
VPIC BARCLAYS TIPS (Tips)	$0
VPIC REAL ESTATE (Real Estate)	$0
VPIC WELLINGTON (Global Asset Allocation)	$0
VPIC WELLINGTON DAS (Domestic Fixed Income)	$0
VPIC SIGULER GUFF DISTRESSED REAL	$0

B. Energy allocation in indices

In various asset classes and indices, energy companies have significant size. In the S&P 500 and other World equity indices, the sector is approximately 11% of the universe. According to Wellington, in 2013 approximately 10% of market issuance in Emerging Markets was accounted for by oil/gas companies. In the Barclay's Aggregate and other global fixed income indices, energy companies comprise approximately 5% of assets. In the commodities area, 33%-75% of the assets are invested in energy securities (such as commodity futures and derivatives), depending upon the benchmark chosen.

Staff recommends against divestment from an industry or sector of large magnitude. The VPIC ESG policy specifically notes that an initiative "must add to or complement and not dilute or compromise the overall Portfolio strategy," and an initiative "must not exceed a reasonable weighting in the Portfolio, or skew a reasonable weighting in the Portfolio as a result of investment in or divestment from any one […] sector." Staff recommends against divestment in light of the second evaluation criterion in the ESG policy ("The extent to which the proposed ESG Initiative will produce the anticipated risk-adjusted return and collateral benefits") due to anticipated reductions in risk-adjusted returns.
Staff recommends against an action that would restrict the ability of investment managers to select securities, which in their professional judgement provides opportunities for above-

average returns. First, the VPIC Investment Policy requires the VPIC to select high quality service providers with the experience and capabilities to provide investment services to the VPIC. The VPIC has elected to adopt the Investment Managers' proposed investment guidelines in order to obtain the full benefits of the respective Managers' proposed investment strategy. Second, factor 1 of the VPIC ESG policy notes that an ESG initiative "must add to or complement and not dilute or compromise the overall Portfolio strategy." Staff again recommends against divestment in light of the second evaluation criterion in the ESG policy ("The extent to which the proposed ESG Initiative will produce the anticipated risk-adjusted return and collateral benefits") calls for divestment should be rejected due to anticipated reductions in risk-adjusted returns.

C. Diversifying element and inflation hedge in a portfolio

As evidenced by S&P sector data, the energy sector offers a diversification benefit to the VPIC portfolio, with some of the lowest correlations to other sectors in the index[5]. The ubiquitous role of energy in the global economy not only creates investment opportunities in its own right, but also provides a catalyst for other parts of the economy to do well when the commodity price is low. This role also directly provides a natural inflation hedge within the portfolio. It should be noted here that the VPIC's statutory standard of care (14A V.S.A. § 902) identifies inflation as a factor for the VPIC to consider; further, 14A V.S.A. § 903 requires diversification of the investments of the VPIC portfolio, absent a VPIC determination that the purposes of the VPIC are better served without such diversification.

By eliminating a diversifying element of the portfolio, risk – and in this particular case, risk includes both volatility and risk due to the lack of an inflation hedge - would necessarily rise. This could result in an increase in the volatility of a component of the annually required contribution. Due to the dominance of energy securities in the commodities asset class, VPIC's commodities allocation would be eviscerated. In order to return to the pre-divestment level of risk, the portfolio would need to be restructured, necessitating a reduction in expected return. **Judging from an estimate of historical performance, the foregone return could be on the order of $9,000,000 annually.[6]**

Staff recommends against restricting the ability of managers to select securities which in their professional judgement provide opportunities for above-average returns and which provide both a diversifying element and an inflation hedge to the portfolio. The VPIC ESG policy, factor (1), notes that an initiative "must add to or complement and not dilute or compromise the overall Portfolio strategy"; factor 2 notes, "Social benefits of the ESG Initiative will not justify lower risk adjusted returns or higher investment risk for the Portfolio or any asset class

[5] In the case of S&P 500-indexed portion of the portfolio only, it is estimated that the increase in annual standard deviation would be approximately 0.4%. To put this in context, the fluctuation in the large cap US equity holdings would increase by approximately **$1,760,000**. (11% of $4.0 billion is $440 million. 0.4% of this is $1.760 million.)
Correlation data taken from http://www.assetcorrelation.com/sectors/3652
Similar diversification costs are likely in other asset classes and are not estimated here.

[6] See endnote

within the Portfolio"; and factor 3 notes "Social benefits of an ESG Initiative will not justify deviation from the Asset Allocation Plan adopted by the Committee."

3. Costs of ESG initiative and impact of the implementation on time and resources.

A. One-time costs

Transaction costs to sell existing positions would be incurred as part of the restructuring process. Sale-and-repurchase fees would be less for large liquid stocks, but higher for less-liquid stocks and positions. Costs to convert commingled accounts (currently approximately two-thirds of the VPIC portfolio) to separate accounts that conform to divestment requests are unknown but likely significant.

Also significant would be the costs associated with trying to unwind any private equity, real estate or private debt investments for which multi-year capital commitments have been made. These costs would arise from a markdown to the NAV associated with the sale of a position in the secondary market. The relative illiquidity of such positions due to the VPIC contractual commitment to fund capital calls would likely lead to a large "haircut" in the sale price compared to the current market value of the underlying collateral.

Further costs could be incurred and foregone investment opportunities suffered if some managers were unwilling or unable to provide investment advisory services with the restriction imposed by divesting. Four of the existing SSgA equity fund contracts would need to be terminated. Other commingled funds which all require broad discretion to implement their strategies would not be willing to accommodate this requirement. And as noted above, the current commodities allocation would of necessity need to be abandoned. These actions would require RFP processes, manager selection efforts, contract negotiations and possibly higher management fees relative to the prior managers. Staff is aware of at least one instance in which this would occur with a separate account.

B. Recurring costs

The inability to take advantage of some investment strategies that are only economically viable for VPIC within a commingled investment vehicle would represent a recurring opportunity cost. The VPIC would be unable to invest in traditional low-cost index funds. Advisory and monitoring fees would also increase as specialized investment benchmarks would need to be created to monitor performance of the divested funds and customized compliance monitoring and proxy-voting efforts would need to be instituted.

C. Soft costs

There would be a diversion of Staff's time toward the implementation and ongoing monitoring of the new portfolio, reducing resources available for other investment-related activities in the Treasurer's Office.

Assuming 0.25% as a total cost of converting all accounts to fossil-fuel-free holdings, one-time transaction costs could approximate $10,000,000. Even at 10 basis points, this cost

would be approximately $4,000,000. The extent of recurring costs cannot be estimated at this time[7]. Staff notes for comparison purposes that the University of Washington expects that its $2.6 billion CEF ("Consolidated Endowment Fund") portfolio will suffer the following losses over 20 years [8]:

Estimated impact to CEF from divestment based on prior performance*

	Projected impairment due to fossil fuel divestment	Projected impairment due to full coal divestment	Projected impairment due to thermal coal divestment
Annual Cost Impact on Rolling CEF returns from divestment	-20 bps	-3 bps	- -1 bp
Cumulative Cost Impact on CEF Market Value over 20 years	($250,000,000)	($39,000,000)	(13,000,000)
Cumulative Cost Impact on CEF Distributions over 20 years	($58,000,000)	($9,000,000)	(3,000,000)

*Estimates based on analysis of historical monthly returns of market indices and applied to UW CEF policy portfolio. Source data provided by MSCI, a global provider of stock market indices.

Staff recommends against divestment in general which does not satisfy factor (5) of the VPIC ESG policy, as there is no demonstrable benefit to the portfolio from the action yet there are potentially significant expenditures of time, resources and money necessary to effect the changes. In the specific case of coal common shares, the amount of the holding is small enough to represent a minor one-time transaction cost. It is unclear what the foregone opportunity costs would be from eliminating this industry from future investment. It is unclear at this time what the cost would be of converting commingled accounts to fossil-fuel free alternatives; however, it is certain that commingled fund managers would not accept this restriction on their investment authority. At the very least, funds such as SSgA's commingled equity funds would need to be replaced and the commodities allocation would effectively cease to exist. Allianz trades S&P futures contracts for alpha over the ten year Treasury; presumably this investment would also need to be terminated. It is also certain that some commingled accounts (e.g. AQR) would have no fossil-fuel free counterpart, necessitating a restructuring of the entire VPIC asset allocation structure. The investment guidelines, benchmarks and potentially fee structures for all separately managed accounts would need to be renegotiated. Finally, it would not be possible to monitor forgone return or lost opportunity cost, as provided by ESG factor 5 and ESG evaluation criteria 3 and 4. For VPIC managers' current investment thesis on coal please see Appendix II.

4. Governance considerations

[7] Overall, if nearly the entire VPIC portfolio were to be converted to energy-free separate accounts, the dissolution of advanced strategies, commingled funds and separate accounts could approach **$10,000,000**. This assumes 0.25% impact from a combination of transaction costs, bid-ask spread realization, and possible market-impact. None of the costs noted in the recurring costs section can be estimated at this time.

[8] Page 20: http://www.washington.edu/regents/files/2015/05/2015-05-F-9.pdf

A. Prudent Investor Rule

The VPIC is required to make its investments in accordance with the standards of care established by the prudent investor rule[9] under 14A V.S.A. § 902. This is the standard of care to which the VPIC's investment managers are held as well. Standards the VPIC is required to consider include general economic conditions; the possible effect of inflation or deflation; the role that each investment or course of action plays within the overall trust portfolio, the expected total return from income and the appreciation of capital; other resources of the beneficiaries; needs for liquidity, regularity of income, and preservation or appreciation of capital; and an asset's special relationship or special value, if any, to the purposes of the trust or to one or more of the beneficiaries.

B. Development of VPIC's investment process and strategy

In accordance with its statutory standard of care and other applicable Vermont law, the VPIC meets monthly to consider new investments, oversee the suitability of investments already made and remove imprudent investments. Decisions regarding investment management contracts, investment policies and proxy-voting are codified in the VPIC's Investment Policy Statement and proxy-voting guidelines available online and by request. Expert advice is obtained from third-party consultants and investment managers with a fiduciary duty to the VPIC. The VPIC directs studies of various issues related to the portfolio's composition and characteristics. Both external and staff expertise are brought to bear on investment issues which are brought to the VPIC for discussion. The end result of these deliberations is an investment process, strategy and policies which govern the investment of the VPIC portfolio.

In accordance with VPIC's current legislative mandate to maximize total return on investment, within acceptable levels of risk, this process has resulted in a portfolio structure which solely utilizes outside investment managers, in many cases active managers, who have been hired for their skill and particular area of focus after an open and competitive selection process. These managers are given a great deal of discretion pursuant to their investment management contracts. If it were evident that the return prospects for the contemplated divestment campaign's targets were particularly poor, a manager's existing investment process would either eliminate those holdings from the portfolio or not identify a particular investment as attractive in the first place. The current processes for evaluating ESG factors by VPIC's investment managers is outlined in Appendix IV.

By restricting the opportunity set from which managers may choose, VPIC potentially reduces not-only the choice of managers available to VPIC but also the range of strategies that VPIC and its managers can be employ.

Staff recommends against a divestment which necessarily has the result of arbitrarily restricting the asset allocation from utilizing all managers and strategies that might otherwise provide opportunities for above-average returns and which could provide diversifying elements to the portfolio. The VPIC ESG policy, specifically factor (1), notes that an initiative "must add to or complement and not dilute or compromise the overall Portfolio strategy."

[9] Relevant Federal law: 26 USC 401(a)

C. Exclusive Benefit Rule

The State retirement plans are subject to Section 401(a) of the Internal Revenue Code which provides that the plans must be maintained and the trustees must act for the exclusive benefit of the plans' beneficiaries. The "exclusive benefit rule" is codified in State law as follows:

> Under any trust or custodial account, it shall be impossible at any time prior to the satisfaction of all liabilities with respect to members and their beneficiaries for any part of the corpus or income to be used for, or diverted to, purposes other than the exclusive benefit of members and their beneficiaries. (3 V.S.A. 472a(b))

Divestment actions are projected to have an economic impact (through a combination of diminished expected return, increased risk and/or increased costs), which may raise the issue of whether this proposed divestment is consistent with this "exclusive benefit rule." Because the status as a qualified plan provides for: 1) deferral of taxation on employer "pick-up" contributions on behalf of members; and 2) tax-exempt advantages on the investment income from the plan's assets, serious consequences would likely result if the qualified status of the trust was lost. Some of the consequences of disqualification could include:

- Employer contributions could become taxable to employees as income at present;
- The income of the plan could become taxable;
- IRS guidance is not definitive, but the State might be required to pay income tax and potentially other taxes (if for instance, the IRS did not penalize employees for being participants in a disqualified plan, it could opt to collect withholding taxes from the employer);
- In the event of an IRS review of the plan, the tax liabilities could be assessed retroactively under certain circumstances;
- Beneficial plan member actions such as tax treatment of rollover distributions could be adversely impacted.

5. Benefits of ESG initiative

A. Measurable benefit as required by the ESG policy

The goal of divestment proponents is not to have any direct impact on companies, but rather to stigmatize them. As such, the envisioned benefit is one anchored in publicity and furthering of a message. Further, as the sale of a security pre-supposes the simultaneous purchase of that same security by another party, the notion that "stigma" presents an obstacle for fossil-fuel companies to overcome is flawed, for there would otherwise be no buyer for the security in the first place. "Stigma" is neither a measurable nor a demonstrable benefit, as required by the ESG policy.

Regardless of opinions about the current structure of the global economy, it is inescapable that fossil-fuel/energy sources are a ubiquitous and necessary component of the current economy. An evolution to an infrastructure based on some other power source necessarily requires a transition, a process that has both an uncertain direction and timeframe. To restrict managers' professional judgement about the manner in which to best navigate the transition away from fossil-fuels is in

conflict with the existing VPIC investment process and would not allow the VPIC managers to take advantage of opportunities created by a transition in a manner that best suits their expertise.

B. Loss of proxy voting rights

VPIC's ability to independently assess issues of relevance to the portfolio has resulted in adoption of progressive proxy-voting guidelines[10] which direct investment managers to vote VPIC shares as follows:

- VPIC managers should generally vote FOR shareholder proposals seeking greater disclosure of the company's environmental practices, and/or environmental risks and liabilities.
- VPIC managers should generally support resolutions requesting that companies outline their preparations to comply with standards established by Kyoto Protocol signatory markets, unless: 1) The company does not maintain operations in Kyoto signatory markets; or 2) The company already evaluates and substantially discloses such information to shareholders; or, 3) Greenhouse gas emissions do not materially impact the company's core businesses.
- VPIC managers should generally vote FOR shareholder proposals calling for the reduction of greenhouse gas emissions under a reasonable timeline.
- Generally support shareholder proposals seeking increased investment in renewable energy sources, taking into account whether the terms of the resolution are realistic or overly restrictive for management to pursue.
- Generally vote FOR shareholder proposals calling for a company to commit to reducing its greenhouse gas emissions under a reasonable timeline.
- Generally support shareholder proposals seeking greater disclosure on the company's environmental practices, and/or environmental risks and liabilities.
- Generally support requests asking a company to formally adopt the CERES[11] Principles;
- Generally support the adoption of reports to shareholders on environmental issues.

In addition, a number of managers retained by VPIC are signatories of the Principles for Responsible Investment[12].

---

[10] Relevant proxy-voting guidelines may be found on pages 60-62:
http://www.vermonttreasurer.gov/sites/treasurer/files/pdf/misc/VermontProxyGuidelinesDOMESTIC2010.pdf

[11] "Ceres mobilizes a powerful network of investors, companies and public interest groups to accelerate and expand the adoption of sustainable business practices and solutions to build a healthy global economy."
http://www.ceres.org

[12] "The United Nations-backed Principles for Responsible Investment (PRI) Initiative is an international network of investors working together to put the six Principles for Responsible Investment into practice. Its goal is to understand the implications of sustainability for investors and support signatories to incorporate these issues into their investment decision making and ownership practices. In implementing the Principles, signatories contribute to the development of a more sustainable global financial system."
http://www.unpri.org

The practical effect of divesting from any company is to sell shares to another individual or entity interested in owning the shares. By relinquishing its shares, Vermont will reduce any impact it may currently have as a voting shareholder to effect change as currently contemplated under the VPIC Proxy Voting Guidelines – guidelines which are already regarded as forward-looking and progressive[13]. ***Staff concludes that divestment will undermine the credibility of existing constructive engagement efforts which are undertaken in line with both the proxy voting guidelines as well as the ESG policy.***

C. Reduction in pressure for change

A sale of publicly-traded securities takes place in a secondary market and does not affect the capital structure of the underlying company. In fact, a given company does not know if a particular shareholder sells its stock, because it has already received the proceeds at the initial public offering and the secondary sale has no effect on its balance sheet. As such, a company with policies and practices that Vermont would raise an issue with is likely to be increasingly controlled by those that do not share the same values as articulated by the VPIC Proxy Voting guidelines, since the shares sold are being bought by another party willing to accept affiliation with the company's policies and practices.

Staff recommends against divestment as an action as its lack of effectiveness presents a conflict with the ESG policy, in particular factor 5, which implies a need for an action to have a benefit

D. Impact on constructive engagement

As noted in the VPIC ESG policy:

> *"The Committee supports and prefers the use of constructive engagement to further environmental, social and governance goals where possible and has adopted both Domestic and International Proxy Voting Policies for this purpose. As an institutional investor, we have standing and rights as a shareholder and have the ability as a shareowner to influence corporate and governmental entities to act responsibly through constructive engagement. This includes but is not limited to shareholder resolutions, shareholder sign-on letters, and supporting policy initiatives for transparency."*

The VPIC is able to help effect change in companies' procedures, as well as industry standards through active ownership. To VPIC this means participation in organizations advocating sustainability (e.g. Ceres, INCR), progressive proxy voting policies, filing of shareholder resolutions, and challenging federal regulatory bodies' (e.g. SEC, FASB) enforcement and interpretation of existing policies for the oil and gas industry. The VPIC has collaborated with organizations that promote sustainability to support shareholder resolutions, gain media attention on environmental issues and to pressure companies to reduce emissions. To combat management decisions lagging in environmental disclosure the VPIC has an aggressive proxy voting policy that it reviews annually. This policy often votes against management on environmental disclosure and planning matters. VPIC's shares give it the right to inform management through shareholder resolutions, letters of concern and direct meetings, when they are taking on perceived unjustifiable risks. Complimenting these efforts is VPIC's partnership

[13] per Staff conversations with VPIC's proxy voting consultant (ISS).

with organizations and investors to move the policy discussion to focus on enforcing existing laws and regulations targeting the oil and gas industry's disclosures about risks associated with climate change. Pressure by concerned shareholders through letters and direct meetings moves regulators to discuss disclosure issues and over time to act on enforcement requests and the creation of stricter policies.

VPIC's broad involvement in the ESG fight strengthens its position to put pressure on the oil and gas industry to acknowledge climate change and plan long term for the challenges it will create. The VPIC's investment managers analyze the companies and account for these risks, while the VPIC as an active owner advocates for more transparency through its proxy voting policy and direct engagement efforts. This ensures VPIC managers have the best data to evaluate a company's risks when investing for VPIC. Divesting from oil and gas companies' shares would constrain the VPIC's ability to effect change in the industry. The VPIC would not be able to attend the shareholder meetings to share its views with management, vote its proxy against management's recommendation or have direct meetings with management to find ways over time to get companies to agree to changes in policies and processes. To find out more about VPIC's active ownership activities please read the Treasurer's Sustainability Report located on the Treasurer's homepage or upon request.

Staff recommends against divestment as there would be a reduction in the ability to be an active owner and constructively engage firms, as described in the ESG policy.

Conclusion

As of June 30, 2014 the funded status of the State Employees', State Teachers' and Municipal Employees' plans were 78%, 60% and 86% respectively. Any reduction in expected return could increase the unfunded liability, as the discount rate structure is a function of expected returns on asset classes. The effect could be to worsen the funded status of the plans, which would likely require increased future contributions to the retirement systems.

One point cannot be emphasized enough: **Beyond potential impacts to funding ratios over time, divestment would not serve any tangible purpose beyond making a symbolic gesture that potentially comes at a great cost to the pension plans.** VPIC takes a step backwards by removing its voice from the discussion of issues that give rise to calls for divestment, particularly when it is using that position in discussions to try to effect change. By undertaking divestment, VPIC would be avoiding or undermining meaningful engagement with the very companies with which it should be most concerned. Finally, if it is believed that there is an ethical problem in owning the securities of companies targeted for divestment, this tactic only substitutes for that problem the far more troubling one of knowing that discussions were avoided in which we could help make a difference by being engaged as credible shareholders. ***Staff recommends against divestment as it fails to satisfy the criteria set forth in the VPIC ESG policy, presents significant governance challenges, and is not in the best interest of the pension beneficiaries.***

Appendix I:

Background

Portfolio profile

As of June 30, 2015 the VPIC portfolio had $4.0 billion in assets, comprised of the State pension plan assets (State Employees, Municipal Employees and Teachers Retirement systems), as well as the majority of the City of Burlington Employees Retirement System. These assets are invested across 14 asset classes or strategy types and in 34 funds, 11 of which are separately managed accounts[14]. This structure represents a significant evolution in the management of the pension assets over the last ten years, from a time in which the systems were managed by each separate Retirement System Board of Trustees using a more traditional structure consisting primarily of separately managed stock and bond accounts. Consistent with VPIC's statutory mandate, VPIC has implemented a portfolio structure intended to maximize total return on investment, within acceptable levels of risk for public retirement systems, in accordance with the standards of care established by the prudent investor rule under 14A V.S.A. § 902. As of May, 2015, the annualized performance of the State Employees portfolio during the last 3- and 5-year time frames has been 8.9% and 9.1%, respectively.

Statutory Standard of Care – 14A V.S.A § 902

§ 902. Standard of care; portfolio strategy; risk and return objectives

(a) A trustee shall invest and manage trust assets as a prudent investor would, by considering the purposes, terms, distribution requirements, and other circumstances of the trust. In satisfying this standard, the trustee shall exercise reasonable care, skill, and caution.

(b) A trustee's investment and management decisions respecting individual assets must be evaluated not in isolation but in the context of the trust portfolio as a whole and as a part of an overall investment strategy having risk and return objectives reasonably suited to the trust.

(c) Among circumstances that a trustee shall consider in investing and managing trust assets are such of the following as are relevant to the trust or its beneficiaries:

(1) general economic conditions;

(2) the possible effect of inflation or deflation;

[14] A separate account is one in which VPIC has visibility into the holdings to the specific share level, i.e. VPIC owns 1000 shares of XYZ Company. A commingled account – which is the structure for 24 of the 36 VPIC funds – is one in which VPIC owns shares with particular net asset values, akin to shares in a mutual fund that an individual investor would own. Such a fund could have significant exposure to a particular industry, but VPIC would have no visibility into or control of the amount at any given point in time. But such funds also make available to VPIC diversifying and complex strategies that would otherwise not be economically viable for VPIC.

(3) the expected tax consequences of investment decisions or strategies;

(4) the role that each investment or course of action plays within the overall trust portfolio, which may include financial assets, interests in closely held enterprises, tangible and intangible personal property, and real property;

(5) the expected total return from income and the appreciation of capital;

(6) other resources of the beneficiaries;

(7) needs for liquidity, regularity of income, and preservation or appreciation of capital; and

(8) an asset's special relationship or special value, if any, to the purposes of the trust or to one or more of the beneficiaries.

(d) A trustee shall make a reasonable effort to verify facts relevant to the investment and management of trust assets.

(e) A trustee may invest in any kind of property or type of investment consistent with the standards of this chapter. (Added 2009, No. 20, § 1.)

ESG policy

Divestment is covered by the VPIC Environmental, Social and Governance Initiatives (ESG) policy, dated November 26, 2013. The ESG policy identifies the governing State law (14A V.S.A. 902), IRS code (Section 401(a)) and other considerations that bear on the question of divestment. The policy is included in this report as Appendix II. It is also available online at

http://www.vermonttreasurer.gov/sites/treasurer/files/pdf/retireVPIC/policy/ESG_VPIC_Policy_11182013.pdf

Timeline of VPIC-related divestment legislation

To date, there have been two legislative sessions during which bills have been introduced. The first introduction included a more expansive definition of targeted companies than did the second effort. The second effort has used the "Carbon Tracker" list to identify companies for divestment.

Legislative Session 2013-2014 (H.271, S.131): "An act relating to divesting state retirement funds from companies that extract, produce, or refine fossil fuels."

VPIC regular meeting, February 26, 2013: Staff and NEPC provided reports on the divestment legislation, each of which described estimates of costs and hurdles to be expected in implementing a fossil-fuel-free restriction. The Committee voted unanimously to accept the reports and "to convey to the appropriate legislative committees the recommendation of VPIC to not go forward with this bill."

Legislative Session 2015-2016 (H.229, S.28): "An act relating to divesting State retirement funds from the 200 publically traded companies that hold the largest carbon content fossil fuels reserves."

VPIC regular meeting, November 24, 2014: VPIC's position on fossil fuel divestment was discussed, with the Committee agreeing to leave VPIC's position on divestment unchanged.

Appendix II:

VERMONT PENSION INVESTMENT COMMITTEE
ENVIRONMENTAL, SOCIAL AND GOVERNANCE INITIATIVES
NOVEMBER 26, 2013

The Vermont Pension Investment Committee ("Committee") Investment Policy sets forth the Committee's investment purposes and objectives. This document sets forth the Committee's policy ("ESG Policy") for evaluating opportunities to either make or divest from investments for the purpose of achieving certain environmental, social or governance ("ESG") goals that do not appear to be primarily investment-related, including investments that are intended to have a direct and measurable benefit to economic or community development in the State of Vermont ("ESG Initiatives").

The Committee is responsible for the investment of the assets of the three State pension systems and the assets of municipal systems with which the Committee has an agreement ("the Portfolio"). The Committee is required by law to strive to maximize total return on investment, within acceptable levels of risk for public retirement systems, in accordance with the standards of care established by the prudent investor rule under 14A V.S.A. § 902 (the "prudent investor rule"). Further, the three State pension plans are qualified plans in accordance with Section 401(a) of the Internal Revenue Code. Federal and State law prohibit the use or diversion of any part of the corpus or income of the plans at any time prior to the satisfaction of all liabilities with respect to members and their beneficiaries for purposes other than the exclusive benefit of members and their beneficiaries.

The Committee may choose to consider ESG Initiatives, provided they are consistent with the Committee's obligations to the members and beneficiaries of the participating retirement systems and with the standard of care established by the prudent investor rule. In cases where investment characteristics, including return, risk, liquidity, and compliance with the allocation policy are appropriate for the Portfolio, the Committee may consider ESG Initiatives that have a substantial, direct and measurable benefit to the economic interests of the Portfolio.

ESG Initiatives will be evaluated according to the following factors:

1.) Any ESG Initiative must add to or complement and not dilute or compromise the overall Portfolio strategy. ESG Initiatives will be evaluated within the context of the Portfolio as a whole and not in isolation. The Committee is a long-term investor that strives to maximize investment returns without undue risk of loss.

2.) The ESG Initiative must target risk-adjusted, market-rate returns and provide net returns equivalent to or higher than other available investments at commensurate levels of risk. Social benefits of the ESG Initiative will not justify lower risk adjusted returns or higher investment risk for the Portfolio or any asset class within the Portfolio.

3.) ESG Initiatives must not exceed a reasonable weighting in the Portfolio, or skew a reasonable weighting in the Portfolio as a result of investment in or divestment from any one investment strategy, sector or geographic location. ESG Initiatives should maintain the overall Portfolio's

compliance with its asset allocation strategy. Social benefits of an ESG Initiative will not justify deviation from the Asset Allocation Plan adopted by the Committee.

4.) ESG Initiatives requiring an investment should be managed by qualified discretionary investment managers. The Committee will not make any direct investments. Similarly, any divestment of Portfolio assets should be accomplished by a qualified discretionary investment manager in a manner designed to minimize transactional costs and minimize losses to the Portfolio.

5.) Any benefits of ESG Initiatives should be able to be quantified, reviewed and monitored by the Committee, State Treasurer's staff and third-party consultants without inappropriate expenditure of time and resources. A review of both the investment performance and the collateral benefits will be undertaken for the purpose of determining whether the Committee will maintain an ESG Initiative. The collateral benefits of an ESG Initiative shall be measured, in terms of foregone return, transaction costs and monitoring costs, alongside the estimated return of the ESG Initiative.

All ESG Initiatives will be submitted to Treasurer's Office Staff and the Investment Consultant for review and recommendation to the VPIC. Evaluation of proposals for ESG Initiatives will be considered using the following criteria:

1.) Clarity of the proposed ESG Initiative and its parameters and goals.

2.) The extent to which the proposed ESG Initiative will produce the anticipated risk-adjusted return and collateral benefits.

3.) Ability to implement a proposed ESG Initiative without inappropriate expenditure of time and resources.

4.) Measurement of the opportunity cost created by the ESG Initiative, in the context of the overall Portfolio goals.

5.) The appropriateness of any terms and conditions which may be attached to the ESG Initiative.

The Committee supports and prefers the use of constructive engagement to further environmental, social and governance goals where possible and has adopted both Domestic and International Proxy Voting Policies for this purpose. As an institutional investor, we have standing and rights as a shareholder and have the ability as a shareowner to influence corporate and governmental entities to act responsibly through constructive engagement. This includes but is not limited to shareholder resolutions, shareholder sign-on letters, and supporting policy initiatives for transparency.

Appendix III:

VPIC Investment Manager's Coal Thesis

The following manager summaries are adaptations from email responses received by Staff from managers with their consent to republish.

Guggenheim

Guggenheim holds two bonds with a market value of $1.35mm in their portfolio with exposure to the coal industry. They most recently added to this position in March 2015, when the company refinanced a note at 8.25% due in 2020. The investment thesis to hold this name is that Consol Energy is transitioning from a coal company with exploration and production assets to a pure play exploration and production business. Most recently the company filed to register its coal assets into a master limited partnership (MLP), which it is interpreted by Guggenheim to be a step toward exiting the coal industry by selling off this division of the firm. Essentially the firm is divesting itself from coal and by purchasing the bonds issued by Consol; Guggenheim is funding the company's transition. This opportunity would be lost to anyone who divests from coal.

As for the Guggenheim outlook on the coal industry as a whole, it's negative. Coal mining companies have come under considerable pressure in recent years as a result of cyclical and secular issues. Thermal coal, used to generate electricity, has faced secular demand headwinds from plant retirements due to old age; conversion of coal fired generators to natural gas or other alternatives, and the record low natural gas prices due to the shale boom has added a cyclical element that has exacerbated the market weakness. Metallurgical coal, used in steelmaking, face slowing Chinese steel consumption (50% of global consumption) and a shifting away from coal intensive methods of production that has created an oversupply in the market. Guggenheim does not see the sector as attractive; however, as a firm with a bottom-up investment process they still review all names in the sector and try to find opportunities, such as that of Consol Energy, when they arise.

Champlain

Champlain chooses not to hold shares in companies that are predominately generating revenues related to coal assets, because they do not feel the sector is currently profitable. First, there is a 300+ year supply of coal that is easy to access, so coal producers seldom have any sustainable pricing power. Second, natural gas competes with coal, and there is a surplus of natural gas currently. Lastly, if politicians want to restrict fossil fuels or tax carbon, coal will most likely be the most impacted by such legislation. Therefore, the firm does not hold any coal sector assets at this time.

Aberdeen[15]

Aberdeen does not hold any exclusively coal or coal-related companies in their portfolio at this time. Their analysis has led them to conclude that these holdings do not meet their quality

---

[15] *The above is for informational purposes only and should not be considered as an offer, or solicitation, to deal in any of the investments mentioned herein. Your portfolio may not include these securities. There is no assurance that any securities discussed herein will remain in the portfolio at the time you receive this or that securities sold have not been repurchased. Securities discussed do not represent the entire portfolio and in the aggregate may represent only a small percentage of the portfolio's holdings.*

criteria and are not a better opportunity than the broader opportunity set in Emerging Markets. They do hold companies that have limited exposure to coal stakes, such as Astra International, BHP Billiton and Vale; however, these companies have a diverse asset base and Aberdeen would not consider them at risk if their coal assets lost value. Aberdeen's quality definition that the coal sector does not meet is due to three facts. The first, coal mining companies are price takers in the global market and there is an abundance of supply, so the market is very cyclical. Aberdeen prefers consistent cash flow generating companies. Second, in most Emerging Market countries ownership of coal resources is highly politicized, which raises various other risks that are difficult to quantify. As such, many countries require political connections for companies to secure licenses to extract coal, and this is a risk Aberdeen wishes to avoid. Lastly, ownership of coal resources in Emerging Markets often is by politically connected families or oligarchs. Aberdeen feels these two types of ownership lack integrity in their business dealings and interactions with the capital markets. For these reasons Aberdeen chooses to not hold coal exclusive companies in their portfolio.

KDP

KDP's outlook on coal-related companies is that of extreme weakness. In the high yield market, coal producers have over levered balance sheets due to a secular decline in thermal coal demand. Bankruptcies and debt restructurings are currently underway and KDP expects more to follow. Given the VPIC portfolio is a defensive high yield fund, the analysts do not feel the risks associated with coal-related assets is appropriate for the fund. As a firm they see value in the secured loans of a few coal-related companies, such as Alpha Natural and Peabody; however, the risk of downgrade has made them inappropriate to hold in the VPIC portfolio.

One name in the VPIC portfolio, ArcelorMittal, is on the Carbon Tracker 200 list. KDP defines this company as an integrated steel producer. It has exposure to coking coal, because it along with iron ore are the primary raw materials used in the production of steel. KDP finds the yields attractive given the company's strong credit metrics. They would not define the company's revenue stream as primarily coal-related.

Acadian

This strategy employs a multi-factor model to analyze every security in the investable market available through the contract guidelines for Acadian. They allocate to companies that have attractive profiles based on four fundamental sectors: valuation, growth, quality and technical signals. In Acadian's opinion there are very few coal-mining companies, as defined by the GICS data that are attractive compared to the opportunity set. Their model considers coal-mining companies to be reasonably priced but not cheap, and their growth, quality and technical signals are all ranked poorly. As such, there are only two companies that the model finds attractive in the sector, but that were decided as not appropriate for the VPIC fund given its risk tolerance. Acadian would prefer the VPIC not divest from coal, because if the model did find an attractive opportunity in this sector they would not want the VPIC beneficiaries to miss out on the positive returns it could generate, which goes for any sector that may be a consideration for divestment.

The Carbon Tracker 200 list identifies two holdings in the Acadian portfolio as "coal companies": Mitsubishi Research Institute (0.13%) and Itochu Enex (0.033%). Acadian does not consider these to be coal companies. Itochu Enex is classified using GICS standards as an Oil & Gas Refining & Marketing company, while Mitsubishi is classified as "IT Consulting & Other Services" company. While these firms may hold some type of coal-mining operation, it is not a

predominant part of their revenues and was not considered coal related by Acadian when they determined their investment thesis for each company to hold in the portfolio.

Appendix IV

Investment Managers' Incorporation of Climate Change Concerns into their Processes

In December 2014, the Treasurer's Office Staff ("Staff") surveyed several of the investment managers ("Managers") who contract with the Vermont Pension Investment Committee ("VPIC") to understand how they are incorporating concerns related to climate change into their security selection, fund allocation decisions, and strategic fund initiatives. The following manager summaries are adaptations from the email responses received from the managers with their consent to republish. As a reminder, separate account managers are investing in securities on behalf of the VPIC, so these firms are able to respond about the exact experience of the VPIC holdings. The VPIC holds shares in Commingled funds along with several other investors, so the managers of those funds responded to this survey with regard to the firm-wide position and integration of ESG factors into their investment philosophies and processes.

Several of the asset managers investing money for the VPIC are signatories of the United Nations Supported Principles for Responsible Investing (UN PRI), which underscores their longstanding commitment to integrating ESG into their investment processes, asset stewardship activities and throughout their organization. These firms include Aberdeen, Acadian, Allianz, AQR, BlackRock, Deutsche Asset & Wealth Management, Grosvenor Capital Management, HarbourVest Partners, Mellon Capital Management, Morgan Stanley Investment Management, PIMCO, Schroders, Siguler Guff & Company, SSgA, UBS Global Asset Management, GAM Holding AG, and Wellington Management. This is a big commitment that requires active ownership of shares, transparent reporting on responsible investing activities, and integration of ESG risk analysis in the firm's investment process. Please note that ESG is neither ethical- nor values-based investing (as Socially Responsible Investing "SRI" screens are) and does not employ negative screens. Instead ESG factors are evaluated for a company in any industry to decipher which hold a greater/lesser risk to any given factor that may add risk to the holding or allow them to avoid a catastrophic event if it indeed has less exposure. This analysis can greatly affect the valuation of a holding.

PIMCO

The firm integrates ESG factors into its firm wide macroeconomic view that it determines at its annual Secular Forum. This forum focuses on factors that PIMCO anticipates will shape the macroeconomic environment on a 3-5 year time horizon. Over the last three years, ESG related risks have been explicitly discussed as part of the forum. From a bottom-up, fundamental analysis perspective, PIMCO trains its credit analysts to incorporate ESG concerns into their credit research reports. The firm believes, "with early identification and rigorous incorporation of ESG risk factors into our credit, equity, and sovereign research processes, we can potentially minimize value deterioration in securities that are negatively affected by ESG developments" and "identify proactive opportunities to generate alpha by investing in sectors/issues that are likely to benefit from ESG trends."[16]

[16] VSERS ESG Report, December 2014

AQR
AQR believes that Environmental, Social and Governance (ESG) based considerations provide an alternative perspective for valuation and risk assessment for investments, but also a unique set of challenges in portfolio design for their clients who hold diversified portfolios across the entire capital market.

In order to address these challenges as a business, AQR established an ESG Working Group in 2013 and became a signatory to the UN Principles for Responsible Investing (PRI) in January 2014. The Working Group is a formally recognized group within AQR and endorsed by charter by AQR's Strategic Planning Committee, AQR's ultimate management and governance committee. The Working Group has been established with representation from senior client-facing staff globally. Business strategy and portfolio management functions are also represented to provide appropriate perspective and access to resources to effectively complete the objective of the Working Group.

The ESG Working Group is overseeing the evaluation of several areas of research that the firm believes may be the most promising avenues to incorporate ESG signals that may improve the risk and/or return of their portfolios, while delivering on the key ESG mission principles. AQR expects at least several of these initiatives to be considered for inclusion in their portfolios in the near future.

KDP
Per the energy sector, supply and demand play a large role in the KDP forecasts, which include a 3-year projection for every company held by the firm's portfolios. Whether it is secular shifts in supply/demand due to climate change expectations, implemented or anticipated legislative/regulatory changes, or other exogenous factors, these figures weigh heavily in KDP's analysis of energy companies and in arriving at a KDP Default Risk Ranking. This Ranking is central to the analysis process and determines if KDP's clients are being adequately compensated for the credit risk of a specific company at the price the market is setting for the security.

Mondrian
Mondrian addresses climate change concerns and other investment challenges through its bottom-up analysis. Mondrian uses long term investment models to evaluate the operating environment of each firm over an extended time horizon. By applying these models, Mondrian uses a forward-looking dividend discount methodology to estimate the future dividend stream (both current levels and future growth rates) for each company. The objective is to evaluate the potential risk and effect on share prices due to climate change and other longer term issues that may develop. It is Mondrian's view that de-carbonization of the economy will take place over an extended period of time to allow primary energy producers to adjust their investments to adapt to new emissions policies and production expectations while over the same time horizon newer technologies (such as carbon capture and storage) can emerge and establish infrastructure to support the new policies. This requires global cooperation, which takes significant coordination and time.

With regard to the stranded asset thesis, Mondrian does not "believe the risk of stranded assets applies equally across the fuels as the world must consider the substitutability of each fuel, and

the cost to implement substitution." Mondrian believes "coal is most at risk, given its higher carbon intensity and the ease of substituting its use in generating electricity. Oil, while next in line in terms of carbon intensity, is primarily used in transportation, and despite multi-year investments in alternatives, the world still has not found an economically viable substitute. Finally gas, with its lower carbon intensity, would appear to have the lowest risk of stranded reserves."

Mondrian recognizes that climate change must be considered as a risk to the long-term future of economies and individual businesses. They consider the long term viability of the business models of all the corporations in which they invest, and assess their conclusions in the context of the company's share price and their expected return forecasts. As part of this evaluation, they engage firms' management teams for detailed one-on-one meetings to discuss the sustainability of the companies' processes, including how the firm can better report on their future growth expectations in the face of climate change risks. Given the current depressed energy valuations of oil & gas producers, it is Mondrian's position that the long-term challenges are priced into the stock and therefore the companies must take notice and plan accordingly for the future welfare of their business.

Guggenheim
Guggenheim incorporates ESG factors into their evaluation of corporate issuers and companies' management as part of their investment philosophy and process. In its credit research, Guggenheim analyzes information about how a company approaches environmental issues, such as climate change, in its business activities. A company's ESG disclosure score is reviewed and the research analysts, as part of their bottom-up, fundamental research process, evaluate the credit risks such as litigation, regulatory sanctions or loss of business opportunities associated with the company's EGS practices. It is Guggenheim's belief that companies that follow "best practices" can reduce credit risk, and are preferable to the investment team.

Aberdeen
As an investment manager offering SRI specific funds, ESG/hybrid funds and ESG risk assessment for mainstream portfolios, Aberdeen (AAM) undertakes robust ESG analysis on its equity holdings. Using a bottom-up, fundamental analysis approach to investing, which is built on and complements the firm's equity investment process, AAM's Responsible Investing (RI) team researches global equity buy list names (approx. 300) on SRI and ESG-related issues and tracks the progress of holdings over a ten year period. The RI team determines whether a company is a Pass or a Fail for the SRI specific funds and also undertakes ESG risk assessment for both the ESG/hybrid and mainstream portfolios. The RI team conducts risk assessment on companies in the global equity buy list, including emerging market names, to determine the effectiveness of a company's risk assessment framework, understand how its material ESG risks sit in relation to its financial risks, analyze how a company sets targets for the mitigation of risks and how this is linked to both key performance indicators for executive remuneration and overall group strategy. The team engages investee companies on these issues on a continual basis. The analysis that the RI team undertakes includes material risks assessment associated with CO2 emissions, reporting practices, and environmental hazards. VPIC's fund, with no SRI overlays, benefits from the ESG risk assessment and engagement conducted by the RI team, as this analysis gives AAM's equity analysts a more complete picture of the risk and opportunity set of each investment and also augment's AAM's stewardship role by ensuring investee companies

have a healthy risk management process in place for all their risks. Where necessary, the RI team encourages companies in their portfolio holdings to make improvements that can benefit the companies and investors over the longer term.

Aberdeen became a signatory to the UN Principles for Responsible Investment (PRI) in December 2007 and is committed to looking at the ESG risks and opportunities offered by our equity investments. The firm's Responsible Investing team looks specifically at material ESG issues, including climate change, to determine their impacts on the securities. This bottom-up research, done in-line with Aberdeen's equity investment process, is held centrally by the firm so that all of the regional equity teams have access to it and can integrate it as required.

SSGA

SSGA is one of the largest managers of ESG assets in the world and began managing ESG portfolios in 1986. They are compliant with the UK Stewardship Code and are a signatory of the United Nations supported Principles for Responsible Investment (PRI), which underscores their longstanding commitment to integrating ESG into their investment process, asset stewardship activities and throughout their organization.

As one of the world's largest managers of index equity assets (including the VPIC funds), SSGA is a significant holder of thousands of company names. They centralize their active engagement activities and proxy voting policies within the corporate governance team so that they can exert greater influence to encourage companies to strengthen their ESG practices. In their 2014 Annual Stewardship Report they identified climate change and its impact on business as an engagement focus topic. In that report they also provided information on their engagement efforts in 2013 on ESG issues and identified engagement successes on sustainability matters. In 2014, SSGA further strengthened their ESG engagement capabilities by developing an active ESG engagement screen to identify target companies for engagement, and they published guidance for managements and boards on their expectation as an investor on the development and oversight process on their Corporate Social Responsibility (CSR) program. The VPIC passive portfolios are part of this greater effort by SSGA and are benefiting from their proactive policies on ESG factors.

Champlain

The firm incorporates climate change into its long-term investment analysis process. As long-term investors, Champlain is concerned with the sustainability of firms' business models. They believe climate change is real. While the timeline for severe impacts on companies from climate change is well beyond most investors' time frames, they are cognizant of the risks associated with global warming that companies are exposed, specifically in the Property & Casualty insurance industry holdings in the portfolio. Champlain is confident that their models are incorporating weather-related risks adequately in their expected return expectations on these positions. Furthermore, they also contemplate reduced actual demand for carbon-based fuels in their investment analysis. Such efforts would be most impactful to the industries closely associated with air travel and transportation. Some of the current industrial and machinery holdings in their portfolios are involved with producing more fuel efficient airplanes, creating a more climate friendly natural gas industry, producing more energy efficient factories, as well as helping auto makers produce lighter vehicles. Champlain expects in the short-term the most serious actionable item to impact the portfolio related to climate change would be a policy effort

to curtail greenhouse gases in a meaningful way, which would likely have negative consequences for economic growth.

Wellington

Wellington is a signatory of the UN supported Principles for Responsible Investment (PRI) and believes that integration of ESG factors in its analysis is both "return enhancing and risk mitigating." Wellington points to two studies that display how integration of ESG factors has enhanced returns in peer groups in the past. In May 2012, a Harvard Business School study compared a group of firms that incorporated ESG analysis into their processes to a control group that did not. The firms' returns were observed over an eighteen year period and it was found that the firms that employed ESG factors in their analysis outperformed their peers. Additionally, Goldman Sachs conducted a study that ranked companies based on ESG principles and compared them to the performance of the MSCI ACWI index since the middle of 2007. They found a cumulative outperformance through June 2012 of 39%.

Wellington has a team dedicated to ESG research and engagement initiatives. This team uses engagement and proxy voting as the core of their process. They conduct in-depth reviews of their portfolio holdings company-wide to identify ESG-related opportunities and risks. Once identified, the team and the sector analysts attend company meetings and host one-on-one meetings with management where they raise concerns about the firm's business model. In 2012, Wellington hosted more than 10,000 company management meetings. By frequently engaging with management the analysts are able to observe deterioration of ESG issues within firms quickly and integrate this knowledge into their portfolio decisions. Wellington gave the following example of how the ESG team adds valuable business model details to the investment team's research through their one-on-one management meetings:

> ***Case Study: Sustainability risk policies for project financing and lending practices***
> *Two ESG analysts met with representatives of a large multinational bank to discuss the company's recent ESG efforts. The company spent time explaining how they implemented sector-specific sustainability policies for all lending practices, project financing and other forms of advisory work. Climate change risks, water usage, and stakeholder relations are examples of some of the issues addressed within the policies to avoid future losses for the firm. Customers are monitored annually through an audit process and ranked according to various "compliant" or "non-compliant" categories. Relationships with customers or potential customers that do not meet the established criteria are discontinued. To implement this framework by the end of 2012, the company trained over 6,000 employees globally.*

In addition, the ESG team provides proprietary ESG research including market analysis, sector trends, and portfolio-specific reviews to the firm's portfolio managers. Wellington's sector analysts integrate the ESG team's analysis of ESG sector trends into their long-term investment thesis, which the portfolio manager then uses to make sector weighting decisions. For example, carbon pricing and environmental regulation risk are core factors within the natural gas sector analyst's long-term forecasts, which will then be reflected in their risk/return assumptions that

are integrated into the portfolio manager's decisions to underweight or overweight the natural gas sector. This research is also integrated into a proprietary tool that gives detailed highlights of high/low ESG risks within each portfolio managers' holdings, so that they are aware of all the risks associated with their portfolio.

VPIC's Opportunistic Emerging Markets Debt fund is implemented by the Emerging Markets Debt team whose investment process is influenced by ESG criteria. Wellington places the most emphasis on social considerations when evaluating EM sovereign investment opportunities. They have found that these types of issues can have a direct and immediate impact on political stability and economic policy, both of which are key to evaluating any country's credit profile. Governance – as measured both by the strength of institutions, as well as the quality of policies – is also critically important to their assessment of sovereign risk. Environmental factors are important, but tend to have a less immediate economic, political, and market impact than the other two factors. They do not independently prohibit countries/sectors/companies based solely on ESG criteria unless they believe they are insufficiently compensated for the risks associated with these factors. Wellington's analysts conduct their assessment of ESG factors as part of their overall effort in evaluating any country's probability of default.

With regard to the VPIC's Small Cap Value investment with Wellington, the team has considered governance, and the external impact of business practices, as an important element of the investment process since the inception of the approach. As bottom-up fundamental investors, the team seeks to account for any company specific risks that could materially impact investment outcomes, and the behavior of management is a critical, qualitative factor in that regard. The analysts closely follow corporate SEC filings, other external information pertaining to the behavior and practices of management teams, as well as exogenous impacts that a given company may have. The firm believes that identifying managers who are aligned with shareholders, and who take a long-term view of their businesses, is integral to their investment success. Similarly, given their long-term investment horizon, they are cognizant of corporate behavior as it relates to potential creation of liabilities through questionable environmental or labor practices, and account for this in their assessment of a company's intrinsic value. To supplement their knowledge of these issues, the Wellington ESG Team conducts regular reviews of the approach, and provide the team with reports detailing companies that score particularly well or poorly on an ESG basis. These reviews serve as an additional conduit for information, through which Product Management can identify key issues, and highlight these to the Small Cap Value investment team.

Grosvenor

As an investment manager and advisor for hedge fund investments, Grosvenor does not directly invest in companies. Therefore, they do not actively engage with companies on ESG issues, since they do not hold shares in the firm. Nonetheless, Grosvenor takes the topic seriously. They seek to promote responsible investing and environmental stewardship in the firm and within the alternative investment management industry they belong. In July 2012, Grosvenor became a signatory to the United Nations' Principles for Responsible Investment ("UNPRI"). The firm views the UNPRI as a high-level framework for appropriately considering ESG issues in their investment process. They believe that they are setting an industry standard by being a signatory and seeking to set higher standards of responsible investment and business practices. At the firm-wide level Grosvenor is focused on making significant progress towards adhering to the

UNPRI. They have formed a Corporate Social Responsibility (CSR) Team, comprised of senior employees representing most divisions within Grosvenor. With respect to investment manager due diligence, they have included a CSR module to their formal investment and operational due diligence materials. Grosvenor's due diligence process is comprehensive, focusing not only on investment merits, but also on aspects of the overall firm and business that may impact the firm's success and their relationship with the firm long-term. Grosvenor believes there is value in a manager that incorporates environmental, social and corporate governance policies into its business, helping to align interests with clients and provide attractive opportunities both from a social and investment perspective. This focus is consistent with Grosvenor's culture and commitment to diversity, the environment, and socially responsible investing, and when possible they look to support organizations that work to incorporate these values into their culture and investment process.

As one aspect of Grosvenor's standard due diligence procedures, they ask that all Grosvenor-approved investment managers provide responses to a robust annual questionnaire that addresses a broad range of topics. They leverage this information to obtain an overview of the manager and any changes or updates that have occurred within the last year. The questionnaire contains questions that specifically address the managers' policies on environmental, social, and corporate governance. The managers' responses to these questions allows the firm to better understand the culture of the firms and raise ideas for potential new products and policies going forward that incorporate ESG issues.

Grosvenor has established an environmental program that focuses on improving internal efficiencies related to protecting and improving the environment. The firm adheres to a multi-faceted approach which focuses on energy/waste reduction, recycling and employee education. They encourage energy-conscious and waste-reducing practices across the Firm. We promote responsible production, use and disposal of goods related to day-to-day business operations. Through education and example, they also foster a commitment to environmental responsibility in all of their employees as an integral part of their professional and personal lives. Grosvenor is dedicated to reducing their carbon footprint through research and evaluation of additional steps they can take to reduce their impact over time.

Acadian

Acadian is committed to responsible investing and they were the first quantitative investment manager to become a UN PRI signatory (October 2009). Acadian integrates Responsible Investing practices throughout the investment process (forecasting, portfolio construction, etc). Currently, climate change related considerations are integrated into the forecasting framework through earnings expectations and recommendations from external analysts. As an example, risks on lower future profitability caused by 'anti-carbon' legislation would likely impact company return forecasts, rendering affected companies less attractive and lower their overall portfolio exposure. Environmental signals and other ESG considerations are an active and important area of research; however, industry-wide companies are not mandated to report climate change risk related statistics, so Acadian cannot reliably implement them into the model. If companies did disclose more information in a standardized approach throughout the industry then these factors could be implemented into the valuation process.

BlackRock

BlackRock is a strong supporter of action on climate change and became a signatory to the United Nations Principles for Responsible Investment in 2008. The firm is one of more than 300 of the world's institutional investors calling on government leaders to act on climate change policy. BlackRock has signed the "2014 Global Investor Statement on Climate Change" alongside other institutional investors. The goal of the Statement is to demonstrate global investor support for stronger national and international climate and clean energy policies that support significant increases in clean energy and low carbon investment.

BlackRock emphasizes a long-term, predictable policy framework and believes it is important to long-term investors to incorporate environmental considerations in their analysis and decision-making. Therefore, BlackRock is a member of all three of the regional investor groups on Climate Change:

- *Institutional Investor Group on Climate Change (Europe)*
- *Investor Network on Climate Risk (US)*
- *Investor Group on Climate Change Australia/New Zealand (Australasia)*

BlackRock also supports climate change research via the Carbon Disclosure Project and incorporates climate risk in their investment process. In conventional portfolios portfolio managers are expected to integrate climate change-related factors into their invest analysis and proactively discuss with companies where they are likely to have an economic impact. The factors include:

- *Regulatory changes (e.g., emissions trading, standards)*
- *Climate change opportunities (e.g., government incentives for renewable energy)*
- *Physical impacts (e.g., flooding or other extreme weather events, changes in temperature)*
- *Risk of litigation*

In indexed strategies managed by BlackRock engagement with companies is the key means to integrate ESG factors into investing. Engagement allows BlackRock to share their philosophy and approach to investment and corporate governance with issuers to enhance their understanding of BlackRock's objectives. There are a range of approaches they may take in engaging companies depending on the nature of the issue under consideration, the company and the market. Every year, BlackRock engages around 1,500 companies or approximately 10% to15% of their investments for the benefit of their clients.

To prioritize their engagement process, the firm employs a range of sources to inform their process:

- *Client specific ESG evaluations;*
- *Analysis of shareholder votes;*
- *Research by our fundamental investment teams;*
- *Screening and governance / social, ethical and environmental specific research;*
- *Data from our internal scientific active models; and,*
- *Research by investment banks and external governance specialists.*

BlackRock has a centralized, specialist Corporate Governance and Responsible Investment (CGRI) team within the firm. The team supports the portfolio management teams in fulfilling

their fiduciary duties to clients and their commitments under the Principles for Responsible Investment. For each engagement, the CGRI team works with portfolio managers and their regional committees to determine the firm objectives and how best to reach them. The materiality and immediacy of a given issue will generally determine the level of engagement.

The approach to engagement has long been one of having a private dialogue with companies, setting out BlackRock's views and any concerns and discussing ways these could be addressed. Where they have sizable holdings they believe it is even more important to engage in a discreet manner and to build relationships with companies that will enable them to effect change when necessary. Examples of their work are available in their Annual Reviews which can be found on their website at http://www.blackrock.com/corporate/en-zz/about-us/responsible-investment/responsible-investment-reports

In addition, BlackRock engages in the public policy debate on issues that affect their clients through a specialist Government Relations team. Their interest is in ensuring that policy makers understand issues of corporate governance, investor responsibilities and shareholder rights from the perspective of BlackRock and its clients. BlackRock works to achieve the most effective balance between regulation and best practice guidance to ensure a framework that supports a sustainable investment environment. As part of their broader government relations program, BlackRock meets regularly with elected representatives, officials and regulators to discuss emerging corporate governance issues and how reform might affect their clients' investments.

Allianz Global Investors

Allianz Global Investors has been a signatory to the UN PRI signatory since 2007, but has ESG capabilities since 2000. The firm integrates ESG and climate change concerns into its processes, including security selection and fund allocation decisions, with support from its ESG team. The team is seven strong with each analyst having responsibility for ESG research, proxy voting and engagement, which includes company and individual issuer engagements, public policy and collective investor initiatives, and active proxy voting, along with creating the firm's perspective on ESG issues. The team sits across three offices and its research is integrated across the Allianz Global Investors investment platform. The focus is on multi-stakeholder initiatives to improve market governance, integrating ESG issues into investment decisions, and encouraging improved governance and ESG performance of investee companies.

In addition, Allianz Global Investors was a signatory to the Global Investor Statement on Climate Change, requesting that policy makers develop national laws and regulations to incentivize investment firms to invest in capital to transition to a low carbon and climate resilient economy. To this end, Allianz Global Investors pledged to work with policy makers, identify and evaluate low carbon investment opportunities, assess risks and opportunities created by climate change and climate policy, work with companies they invest in to ensure they are minimizing and disclosing the risks and maximizing opportunities created by climate change, and report on their progress on addressing climate change. Allianz Global Investors is a member of the Cambridge Institute for Sustainable Leadership Investment Leaders Group and is lead on a work stream focused on building a model (already piloted by AllianzGI in 2014) that enables investors to financially model carbon and energy regulation impact on high carbon sectors and companies. The ESG Team has also built an ESG Footprint reporting tool for portfolios which helps clients and portfolio managers to evaluate the relative ESG footprint of their investments including

carbon intensity. On a regular basis the ESG Team publishes ESGMatters a quarterly publication which provides thought pieces from the ESG Team on current and emerging ESG topics ranging from board diversity to climate change risk. Allianz Global Investors is a regular speaker and participant at various ESG conferences and workshops covering a wide range of ESG topics, with contributions ranging to the UNEP FI Inquiry: Design of a Sustainable Financial System to the Bank of England Prudential Regulatory Authority Roundtable on Climate Change.

Allianz Global Investors believes their multi-spectrum approach to ESG integration and climate change analysis allow them to effect change in the most efficient manner and bring awareness to risks and opportunities climate change creates.

HarbourVest

As a UN PRI signatory, Harbourvest is dedicated to incorporating the principals into their internal policies and investment products. As a Fund-of-funds manager, Harbourvest strives to educate, evaluate and monitor the usage of ESG principles embedded in the UN PRI with its General Partners. To this end they have created an ESG committee that is represented by all facets of the firm that meets monthly to organize and monitor the integration of the firm's ESG Policy into the investment process and firm's management. One such tool that is being integrated is a manager scorecard, so that Harbourvest can evaluate their General Partner's investments based on sustainability or resource efficiency. This scorecard will not be used to exclude Partners, but instead be a useful tool to monitor the progress of ESG adoption in the private equity market and monitor the correlation between managers' success with higher ESG ratings in the long run. In addition, Harbourvest has been looking for opportunities created by climate change. In 2008, the firm launched a cleantech-focused fund-of-funds that invests directly in cleantech-focused companies.

Schroders

The firm aims to have a long-term investment process that incorporates ESG value drivers to allow them to meet the needs of the current generation without putting the needs of future generations at risk. To reach this goal the firm has a dedicated ESG team that enables them to be active owners of the companies they invest through proxy voting and direct engagement. In addition, the firm has significant industry involvement by sponsoring sustainability forums; advising on industry-wide research projects; and participating in several organizations, such as a founding member of the Institutional Investors Group on Climate Change, a signatory to the Carbon Disclosure Project since 2006, an original member of the Carbon Action Initiative to encourage public disclosure targets on emissions reductions by companies, and a signatory to the UN PRI since 2007.

Schroders views company engagement as a useful tool to seek change in ESG performance and processes that will enhance share value. In 2013 the firm engaged on a wide range of topics, including environmental factors such as Arctic drilling, climate change and sustainable palm oil. This amounted to 13,396 meetings with companies they held in their equity portfolios and 3,231 meetings with firms in their fixed income portfolios. The firm produces quarterly and annual summaries on its shareholder engagement activities for its investors.

GAM
GAM became a signatory of the UN PRI in December 2014. The firm is currently implementing steps to move towards compliance with the six principles of the PRI. To date, they have approved a set of high level guidelines for integration of ESG factors into the investment decision making process that enables them to retain their cultural philosophy that each investment team should have freedom to think independently and manage the assets using their own methods. GAM's PRI Working Group are currently mapping how the individual investment process for each of the fifteen investment teams of GAM incorporates ESG considerations and evaluating their potential impact on clients. By the end of Q3 they will recommend to the GAM Management Board how to take forward the integration of ESG factors into their processes and how to document and report on their impact. The firm expects to have a plan in place by December 2015 to disclose active ownership efforts, be it proxy voting, company engagement efforts or another form of active ownership.

Mellon Capital
The firm became a signatory of the UN PRI in August of 2013 and of the CDP (formerly the Carbon Disclosure Project) in 2014. Mellon has established an ESG Committee to monitor and establish efforts of Responsible Investing, such as setting ESG objectives in investments and engagements, formalizing policies to incorporate ESG factors into the investment philosophy, integrating the UN PRI principles, and creating transparent reporting reflecting this work.

Conclusion

In summary, the majority of Investment Managers contracted by the VPIC are evaluating the risks associated with ESG factors within their portfolios. In addition, they are voluntarily becoming signatories to the UN supported Principles of Responsible Investing, which holds them accountable to a high standard that requires them to integrate ESG issues into their investment analysis and decision-making process and pledges them to be active owners of their shares. They are obligated to exercise their voting rights, engage companies directly or through collaboration, integrate ESG factors into evolving research and analysis, among other steps to evaluate ESG risks in their portfolios. These steps are required to be reported publicly by each signatory, along with all responsible investment activities, in a standardized format to ensure it is transparent and thorough. VPIC investment managers are industry leaders through their participation in forums, policy discussions and organizations advocating sustainability. All those firms surveyed were aware of the risks created by climate change and have taken steps to ensure their holdings will not be stranded and no opportunity costs will be lost due to challenges elevated by climate change.

Endnote

Using annualized S&P data, staff estimates that the reduction on large cap equity returns from divestment only during the last ten years would have been on the order of 0.6% each year. One of VPIC's international managers used a simulation to estimate that not having had energy in the international equity portion of the portfolio under their management would have reduced performance by approximately 0.7% on an annualized basis, using data back to 1998. Assuming all equity accounts were converted to energy-free separate accounts and a reduction in performance of 0.6%, it is estimated that there would have been a reduction in annual return of approximately **$7,680,000**. (32% of the portfolio is targeted to US and International equities. 32% of $4.0 billion is $1.28 billion, the performance of which would be reduced by 0.6% or $7.68 million.)

A further reduction in return would be expected in order to return the portfolio to the pre-divestment level of risk. Using large cap US equities as a proxy and assuming a parallel shift in an efficient frontier with a positive slope of 32.5%, a 0.6% return reduction and 0.4% risk increase equates to a total reduction in expected return of 0.73%. The incremental 0.13% corresponds to a further reduction of approximately **$1,000,000** in annual return. The incremental 0.13% is derived from an estimate of what a new portfolio would be expected to return, using the new efficient frontier and the risk level that had been adopted prior to divestment. In order to remove the incremental 0.4 standard deviations of risk on the new frontier, one would need to accept a lower expected return, as shown in the chart below. (Note that this does not include an estimate of lost return in the fixed income or alternatives space.)