GEF/C.52/Inf.15
May 12, 2017

52nd Council Meeting
May 22 - 25, 2017
Washington, DC

INFORMATION NOTE ON OPPORTUNITIES AND RISKS FOR IMPLEMENTING A RESPONSIBLE INVESTMENT STRATEGY FOR THE GEF TRUST FUND (PREPARED BY THE TRUSTEE)

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Executive Summary

i. The World Bank as the Trustee for the Global Environment Facility (GEF) Trust Fund manages the GEF Trust Fund assets according to the provisions of IBRD's and IDA's General Investment Authorizations (GIAs)[1]. Approved by the World Bank's Board of Executive Directors, the GIAs determine the framework under which the Trustee provides investment management services to the GEF Trust Fund. It also specifies the types of transactions and eligible investments in which the World Bank is authorized to transact.

ii. All trust funds assets administered by the World Bank, including those of the GEF Trust Fund, are maintained in a commingled investment portfolio (the "Pool"). Individual trust funds within the Pool may have different investment horizons and risk tolerances. To accommodate for these varying investment objectives, the Pool comprises of sub-portfolios (called Model Portfolios) in which trust fund liquid assets can be invested.

iii. The liquid assets of the GEF are invested across three Model Portfolios (Model Portfolios 0, 1 and 2) comprising entirely of investments in high quality fixed income securities as well as cash and cash equivalent securities for liquidity purposes.

iv. At the 50th GEF Council Meeting in June 2016, the Trustee offered the GEF the option to participate in a new Model Portfolio,[2] *Model Portfolio 4*, which was available to the GEF given its size and the stability of its liquidity levels.

v. Featuring a five-year investment horizon, Model Portfolio 4 was designed to potentially enhance the risk/return profile with diversification benefits through a broader investment universe, including a limited allocation to developed market equities, while retaining the capital preservation constraint and adhering to the risk management framework that overarches the World Bank's investment of development partner funds.[3] The World Bank's Board endorsed Model Portfolio 4 pursuant to receipt of written instruction from the relevant governing body, which in the case of the GEF Trust Fund would be the GEF Council.

vi. The equities exposure within Model Portfolio 4 was initially to be gained through replication of the MSCI World index,[4] a common benchmark providing exposure to over 1,600 large- and mid-cap stocks across 23 developed market countries[5] that has been shown to provide diversification and return enhancing benefits to a fixed income portfolio.

vii. The Council took note of the opportunities available to potentially enhance investment returns through diversification of investment options, and requested the Trustee to explore

[1] General Investment Authorization for IBRD (Resolution No. 97-1, adopted on April 18, 1997); General Investment Authority for IDA (Resolution No. 2001-1, adopted on January 23, 2001).
[2] GEF/C.50/12, Investment Strategy Review of the GEF Trust Fund" dated May 19, 2016.
[3] The new risk framework defines the risk tolerance as the expected maximum loss, as measured by the Conditional Value-at-Risk (CVaR), at the portfolio's investment horizon, not to exceed 1% at portfolio's investment horizon, with 99% confidence.
[4] Refer to Annex II for detail on the composition of the MSCI World index.
[5] Developed market countries include: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the UK and the US.

any Environmental, Social and Corporate Governance (ESG) opportunities for the GEF Trust Fund Investment portfolio including the associated tradeoffs and challenges.

viii. Since the 50th GEF Council Meeting, an ESG working group within the World Bank has been examining all aspects of ESG investing with a focus on suitable opportunities for the GEF Trust Fund, among others. In this analysis, the Trustee focused on alignment with the GEF's mandate, adherence to the GEF Trust Funds investment objectives and risk tolerances, and the potential impact on the GEF Trust Fund's investment portfolio.

ix. Considering these factors, the *MSCI World Fossil Fuel Free* and *MSCI World Low Carbon Target* indices appear to be most closely aligned with the core environmental objectives of the GEF Trust Fund and exhibit risk/return characteristics that would provide diversification benefits to the GEF Trust Fund's fixed income investment portfolio.

x. Having said this, neither of these indices offer a perfectly "clean" solution. In addition, the depth and maturity of the ESG equity market appears to be insufficient to validate the credibility and reliability of the carbon and environmental ratings and metrics, or to enable the market to gain a comprehensive understanding of the ESG equity market's behavior in different market conditions. As such, the GEF could benefit from waiting a couple more years before considering an investment in ESG equities. The World Bank will continue to monitor developments in the ESG equity market and will bring this matter to the GEF Council at an opportune time.

xi. This information note aims to provide an overview of the World Bank's approach to the investment management of development partner funds and relevant background information (Section I). It presents an overview of Environment, Social and Corporate Governance (ESG) investing (Section II), ways in which ESG considerations can be included into an equity portfolio (Section III), an overview of existing ESG equity indices that align with the GEF's mandate (Section IV), and a summary of opportunities and challenges associated with an exposure to ESG equities (Section V). Considering these points, the note presents investment options available for the GEF and an analysis of the potential impact that participation in a broader, ESG focused investment strategy might have on the risk/return profile of the GEF investment portfolio on a forward-looking basis (Section VI), and provides a preliminary estimate of associated costs (Section VII). In conclusion (Section VIII), the GEF would benefit from waiting a couple more years before considering an investment in ESG equities.

I. Background

1. The World Bank manages the GEF Trust Fund assets according to the provisions of IBRD's and IDA's General Investment Authorizations (GIAs),[6] approved by the World Bank's Board of Executive Directors. These GIAs determine the framework under which the Trustee provides investment management services to the GEF Trust Fund, and specify the types of transactions and eligible investments in which the World Bank is authorized to transact.

2. All trust fund assets held in trust by the World Bank, including those of the GEF Trust Fund, are maintained in a commingled investment portfolio (the "Pool"). The Pool is comprised of Model Portfolios with differing investment characteristics in order to accommodate the specific investment objectives and risk tolerances of individual trust funds. Model Portfolio 0 comprises bank deposits and money market instruments with an investment horizon of three months; Model Portfolios 1 and 2 employ a greater selection of fixed income instruments with investment horizons of one and three years, respectively. Overall, all assets in the Pool are invested in a liquid and highly rated spectrum of eligible fixed income instruments.

3. The investment objectives for the GEF Trust Fund are to optimize investment returns subject to preserving capital and maintaining adequate liquidity to meet foreseeable cash flow needs, within a conservative risk management framework.[7] In line with these objectives, the GEF Trust Fund's liquid assets are invested in Model Portfolios 0, 1 and 2. The investment characteristics of the three Model Portfolios and the asset allocation of the GEF Trust Fund's portfolio as of March 31, 2017 are set out in Annex 1.

4. In light of the continued low interest rate environment, the World Bank developed a new model portfolio, Model Portfolio 4, to provide additional investment options to trust funds that have liquidity levels that are significant in size and stable over a period of five years or longer. Model Portfolio 4 is designed to potentially enhance the risk/return profile of funds through added diversification benefits while retaining the conservative approach to risk that overarches the World Bank's investment of donor funds.[8] Model Portfolio 4 features a five-year investment horizon and comprises a broader investment universe, which includes developed market equities.

5. The rationale for considering a limited allocation to developed market equities is two-fold:

- Firstly, in a growing economy, equities offer the potential for capital appreciation over the longer term.
- Secondly, equity and bond returns have low correlation, i.e., they do not generally move in tandem. As such adding equities to the fixed income investment portfolio may provide diversification benefits, i.e., the potential for adverse outcomes in a portfolio that has a small allocation to equities tends to be more limited over the long-term than in an all bond portfolio, because the small equities portion counterbalances risk of loss or below-inflation returns in bond holdings.

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[6] General Investment Authorization for IBRD (Resolution No. 97-1, adopted on April 18, 1997); General Investment Authority for IDA (Resolution No. 2001-1, adopted on January 23, 2001).

[7] Risk tolerance is defined as the expected maximum loss, as measured by the Conditional Value-at-Risk (CVaR), at the portfolio's investment horizon, not to exceed 1% at portfolio's investment horizon, with 99% confidence.

[8] The new risk framework defines the risk tolerance as the expected maximum loss, as measured by the Conditional Value-at-Risk (CVaR), at the portfolio's investment horizon, not to exceed 1% at portfolio's investment horizon, with 99% confidence.

6. This implies that a portfolio with an allocation to equities can offer potential for higher returns over the long term than a fixed income portfolio, while remaining within similar risk parameters. The risk-return characteristics of a portfolio made up of diverse types of investments are often superior to those of any of the individual constituent components making up the portfolio.

7. The Trustee has a fiduciary responsibility to help clients achieve their long-term investment objectives. In the case of the GEF Trust Fund, this has been implemented by an investment strategy that seeks to maximize the financial return of the GEF Trust Fund within conservative risk limits. The Bank is equally aware of its clients' missions and values and is committed to working with clients to implement responsible investment strategies and policies that align with the overarching fiduciary mandate. Consideration of these factors translates into the implementation of investment strategies that are meaningful, measurable, pragmatic and cost effective.

II. What is Environmental, Social and Corporate Governance (ESG) investing?

8. ESG investing – or inclusion of environmental, social and corporate governance criteria into investment analysis and portfolio construction – has been steadily growing over the last decade with an increasing number of investors integrating ESG factors into their investment decisions, and an increasing number of companies disclosing such information. The estimated market size of investment funds[9] incorporating ESG factors increased from USD 179 billion in 2005 to USD 2.6 trillion in 2016.[10]

9. Responsible investing can be implemented in many different ways; however, broadly speaking, the concept relates to going beyond financial considerations in the evaluation of an investment to take into account investors' values and beliefs, primarily by considering environmental, social and governance factors.

10. With regard to the fixed income portion of the GEF Trust Fund's current portfolio, it is primarily invested in sovereign debt and securitized bonds, (e.g. Asset Backed Securities, ABS). The availability of ESG metrics and meaningful data for these asset classes is only recently gradually emerging and is still at the very early stages. The Trustee, however, constantly monitors ongoing developments in this area, and is currently reviewing recently published studies to assess their appropriateness and relevance. Notwithstanding, and from a risk management perspective, the Trustee has traditionally applied a very rigorous risk assessment to every investment and portfolio, which may already account for a number of material ESG factors. Work is currently underway to streamline and formalize a comprehensive and consistent incorporation of material ESG factors in the management of all investment portfolios.

11. In the case of sovereign bonds, significant conceptual challenges remain for the production of sensible metrics, such as for measuring carbon intensity of a portfolio. These conceptual limitations stem not only from the lack of sufficient and updated data, but also due to methodological issues dealing with double counting of emissions and attribution of ownership.[11] The same applies in the case of securitized instruments, and ABS in particular, where

[9] Including mutual funds, variable annuity funds, closed-end and exchange-traded funds, alternative investment funds and other pooled products.
[10] Data Source: "Report on Sustainable and Responsible Investing Trends". 2016. http://www.ussif.org/content.asp?contentid=82
[11] For a more detailed discussion see Burns, S., Alexeyev, J., Kelly, R., Lin, D., (2016) Carbon Disclosure and Climate Risk in Sovereign Bonds. Global Footprint Network, Oakland, CA.

the level of separation from the real assets being financed is even greater. In the case of the MSCI indices, ABS are considered neutral (i.e. they are not subject to the optimization criteria) from a portfolio construction approach given the lack of data to determine their ESG rating.

12. In the context of equities, an ESG-aware investment approach seeks to achieve long-term financial returns together with a positive ESG outcome. The three parameters can be thought of as follows:

- **"E" (Environmental):** Aims to account for the direct or indirect impact of a company's activity on the environment. Examples include waste management, level of carbon dioxide emissions, responsible consumption of water, and degree of energy efficiency.
- **"S" (Social)**: Aims to account for the direct or indirect impact of a company's activity on customers, employees, stockholders, communities, and society in general, including issues such as respect for human rights, international labor standards, and anti-corruption.
- **"G" (Governance)**: Aims to account for processes, regulations, laws and institutions influenced by the way in which the company is managed, controlled and conducts day-to-day business. This includes, in particular, the relationships between the company's stockholders, management and board of directors. Examples include the balance of powers, business ethics, and fraud and anti-competitive practices.

III. Ways to Incorporate ESG Considerations into an Equity Portfolio

13. ESG factors can be incorporated into an investment portfolio in several ways, with the financial and ESG objectives of an individual portfolio defining which approach is most appropriate. The main approaches include:

a) **Negative/exclusionary screening.** This approach involves excluding specific companies, ESG profiles or industries from the investable universe based on predefined criteria. Exclusions are aligned with an investor's values, investment beliefs or policy objectives, which take precedence over financial considerations. For example, the MSCI Fossil Fuel Free index excludes companies that have proven or probable fossil fuel reserves. Under this approach, at a time when particular industries (such as coal-mining companies) outperform the market, the investment portfolio may lag its benchmark and therefore typically has a relatively high tracking error[12] versus the benchmark. This approach is often referred to as a "selection" strategy.

b) **Positive/best-in-class screening.** This approach involves building a portfolio of companies with desirable characteristics or ESG-related profile to form an investment universe. This approach may involve the use of ESG ratings to rank companies within a particular sector and choose to invest in those that have the best overall ranking. It forms the basis for an optimized or "smart" ESG portfolio approach, whereby the portfolio remains neutral with regard to sector exposure, but favors companies with better ESG profiles. Often referred to as a "re-weighting" strategy, this approach is used in the MSCI Low Carbon Target index.

[12] Tracking error is the difference between a portfolio's returns and the benchmark or index it is designed to mimic or outperform. Tracking error is sometimes referred to as active risk.

14. Other approaches include **ESG integration**, which is used to achieve enhanced portfolio valuation models or an enhanced portfolio risk framework; and **impact investing**, which involves creating investment portfolios that prioritize specific environmental or social impacts.

Figure 1: Main Approaches to Incorporating ESG Considerations into an Equity Portfolio

Strategy	Rationale
Negative/exclusionary screening	Suited for investors willing to prioritize any of the following specific and predefined criteria over systematic risk/return objectives: • Values (social, environmental, religious, moral, etc.) • Investment beliefs (e.g. long-term exposure to stranded-assets) • Policy goals (divestment from certain controversial sectors, etc.)
Positive/best-in-class screening	Suited for investors interested in prioritizing the quality of the ESG profile of their investment portfolios over market risk/return.

15. In order to determine which of these strategies is most suitable for a particular investor, there are some key parameters to be considered. Figure 2 provides a comparison of how key parameters are considered in each of these strategies.

Figure 2: Consideration of Key Parameters in Selection and Re-weighting Strategies

Parameters	Selection (MSCI World Fossil Fuel Free)	Re-Weighting (MSCI World Low Carbon Target)
Short Term Risk	Tracking error relative to the parent index is not a consideration in decisions to exclude particular companies.	Uses Optimization to reduce tracking error to parent index.
Long Term Thesis	Exposure reduction is solely based on excluding companies with fossil fuel reserves.	Uses optimization to reduce exposure to companies most vulnerable to being exposed to current and future emissions while retaining complete opportunity set.
Public Stance	Excluding specific names makes a strong public statement.	May allow for engagement with companies.

IV. The Current ESG Landscape

16. One of the largest index providers in the capital markets, MSCI, currently has various ESG indices that comprise sub-sections of their well-known broad market indices. MSCI's size and stature ensures that a significant amount of research goes into their ESG Integration and its application to indices.

17. Perhaps the flagship of the MSCI's ESG indices is the MSCI World ESG Index, a broad, diversified index that provides exposure to large- and mid-cap companies from developed markets with high ESG performances relative to their sector peers. Companies included in this index are ranked by ESG ratings based on the MSCI methodology.[13]

[13] Refer to ESG Ratings Methodology - MSCI for details on the ESG rating and surrounding methodology.

18. While the MSCI World ESG index applies equal consideration to the environmental, social and governance factors, indices that focus more on the "E" element within ESG would be most appropriate for investment participants like the GEF. To this effect, MSCI has developed a suite of indices that measure and report on certain climate metrics, such as *carbon emissions intensity* and *potential emissions*, thereby capturing the environmental benefits achieved by selecting one of these indices over the broad market index.

19. Considering the GEF's mission to promote environmentally sound and sustainable economic development, and the need for an optimal balance between risk and return, two indices appear closely aligned with the GEF's objectives:

i. The MSCI Fossil Fuel Free Index; and
ii. The MSCI World Low Carbon Target Index.

20. These indices have similar characteristics to the MSCI World ESG index, but focus predominantly on environmental considerations. They are considered to be appropriate vehicles through which to gain equity exposure largely due to their goals of excluding companies that own oil, gas or coal reserves (in the case of the MSCI World Fossil Fuel Free index) or supporting transition to a low carbon economy (in the case of the MSCI World Low Carbon Target index). Key components of these two indices, relative to the MSCI World index, are summarized in Figure 3, with descriptions of the approaches and methodologies adopted by each provided in Annex 2.

Figure 3: MSCI Equity Indices with ESG Investment Approach, Description and Methodology

Index	ESG Investment Approach	Description
MSCI World Index	N/A	– Large and mid-cap representation across 23 developed markets. – 1,629 constituents.
MSCI World Fossil Fuel Free	Negative/ Exclusionary Screening	– A sub-section of the MSCI World Index. – Excludes companies with proven or probable reserves of fossil fuels (oil, gas and coal) for energy purposes. – Designed for investors who aim to eliminate fossil fuel reserves exposure due to concerns about their contribution to climate change or as hedging against climate-related risks[14]. – Does not exclude users of fossil fuels, and may therefore include companies that are significant polluters. – 1,546 constituents.
MSCI World Low Carbon Target	Positive/ Best-in-class Screening/ESG Integration	– A sub-section of the MSCI World Index. – A benchmark for investors who wish to manage potential risks associated with, and to encourage the transition to a low carbon economy. – Aims to minimize carbon exposure. – 1,260 constituents.

21. Since inception of the two MSCI ESG indices in November 2010, the risk and return statistics of the MSCI Fossil Fuel Free and MSCI Low Carbon Target indices have been very similar to those of the MSCI broad market index. In both cases, these indices have achieved a

[14] Climate-related risks in relation to stranded assets in fossil-fuel sectors may arise mainly as a result of stringent regulations (regulatory risks) or transition to cleaner technologies (transition risks).

slightly higher return for a similar level of risk (lower level of risk in the case of the MSCI Fossil Fuel Free index).

22. In addition to traditional risk and return statistics, MSCI measures some common carbon metrics to determine the *climate performance* of each ESG index. These measures help to quantify the benefit of moving from the broad market index into the ESG iterations of the MSCI index. Examples of such measures are Current Carbon Emissions, Carbon Intensity, and Potential Carbon Emissions (refer to Annex 3 for more definitions of each of these measures).

23. Relative to the MSCI World index, constituents of the MSCI World Fossil Fuel Free index exhibit a 19% reduction in Current Carbon Emissions, a 17% reduction in Carbon Intensity, and a 100% reduction in Potential Carbon Emissions. Similarly, constituents of the MSCI World Low Carbon Target index exhibit a 75% reduction in Current Carbon Emissions, 73% reduction in Carbon Intensity, and 88% reduction in Potential Carbon Emissions. The risk, return and climate performance characteristics are summarized in Figure 4.

Figure 4: MSCI World Index Comparative Returns and Carbon Metrics
(30 November 2010 to 31 March 2017)

	MSCI World Index	**MSCI World Fossil Fuel Free**	**MCSI World Low Carbon Target**
Annualized Return	10.0%	11.0%	10.3%
Annualized Volatility	12.4%	12.1%	12.4%
Tracking Error (basis points)	n/a	100	40
Number of Constituents	1,629	1,546	1,260
Carbon Emissions (t C02e/$m invested)	138	112	34
Reduction From Benchmark	n/a	-19%	-75%
Carbon Intensity (t C02e/$m Sales)	220	183	59
Reduction From Benchmark	n/a	-17%	-73%
Potential Carbon Emissions (t C02e/$m invested)	2404	0	287
Reduction From Benchmark	n/a	-100%	-88%

24. While this analysis implies that the diversification benefits achieved through inclusion of an allocation to developed market equities would be very similar regardless of whether this exposure was gained through the MSCI World or either of the two MSCI ESG indices, the differences in the composition of the indices may cause performance to diverge from time to time.

V. Opportunities and Challenges with an Exposure to ESG Equities

Opportunities

25. The key opportunity associated with an investment in Model Portfolio 4, including an allocation to developed market equities, is the potential for enhanced investment income through

diversification benefits. Presented in detail in the Investment Strategy Review of the GEF Trust Fund (GEF/C.50/12)[15], this opportunity was noted by the GEF Council at its 50th meeting in June 2016. It is important to reiterate that ESG equities indices have exhibited similar risk, return – and therefore diversification – characteristics as the MSCI broad market index.

Challenges

26. Among the numerous ESG indices available, there is significant variance in the level of investor tolerance of environmentally insensitive industries. For example, some indices consider total exclusion of fossil fuels to be environmentally compliant, while others consider a low carbon exposure as such. Therefore, a key challenge associated with the adoption of an ESG equities strategy is determining which of the available integration approaches is most appropriate. A key step in this process is to identify the *environmental standards definition* or *acceptable tolerance level* that aligns with the long-term investment objective of the GEF, and provides a sufficient level of comfort that the GEF would indeed be invested in an ESG neutral portfolio.

27. Of the two indices presented in this paper, neither offers a perfectly "clean" solution – that is, each case would have some residual exposure to primary or secondary polluters. A perfectly "clean" portfolio would require a highly customized, actively managed portfolio by an external asset manager, which would be significantly more expensive than the passively managed index approach. In addition, the climate performance of an index is dependent on the underlying constituents, which change over time. This poses a challenge in validating the credibility and reliability of the carbon and environmental ratings and metrics.

28. Furthermore, as the ESG equity market is relatively new and evolving, with the larger ESG indices having track records of less than ten years, insufficient time has passed for the market to fully understand the behavior of the MSCI ESG indices in different market conditions. In order to gain a comprehensive understanding of the financial and qualitative characteristics of the ESG equity market, it would be preferable for the indices to have a longer track record.

VI. Analysis of GEF's Participation in Model Portfolio 4

29. In order to depict what the GEF Trust Fund's current investment portfolio might look like in five years, a portfolio similar in asset composition to that of the GEF was examined at the five-year horizon. As the portfolio's risk/return profile is dependent on the trajectory of interest rates over the next five years, the expected annual returns, volatility in annual returns and probabilities of negative returns under the current asset allocation framework were examined under the following scenarios:

i. *Current* scenario under which interest rates remain at their current levels.

ii. *Forward* scenario under which interest rates are expected to gradually converge towards the forward rates over a five-year horizon, as implied by the current market rates.

Under these scenarios, the expected annualized weighted average returns for the GEF Trust Fund would range between 1.52% and 1.81%, and the Conditional Variance at Risk (CVaR) figures are

[15] GEF/C.50/12, "Investment Strategy Review of the GEF Trust Fund" dated May 19, 2016.

positive, which means that in the worst 1% of cases, portfolio returns are expected to remain positive on average.

Figure 5: Liquidity distribution and risk/return statistics for GEF Trust Fund portfolio (as of March 31, 2017)

Model Portfolios 0 and 1			
GEF Holdings	$ 325 million		
		Current Scenario	**Forward Scenario**
Expected Return		1.35%	1.38%
Volatility		0.44%	0.45%
CVaR Return		0.28%	0.21%
Probability of Negative Return		0.05%	0.10%
Model Portfolio 2			
GEF Holdings	$ 3,094 million		
		Current Scenario	**Forward Scenario**
Expected Return		1.54%	1.85%
Volatility		0.71%	0.73%
CVaR Return		1.09%	1.86%
Probability of Negative Return		0.20%	<0.1%
GEF Weighted Average Annual Returns		**1.52%**	**1.81%**

30. In order to illustrate the potential impact on the risk and return of the GEF Trust Fund's investment portfolio with an allocation to Model Portfolio 4 (developed market ESG equities), a simulated investment portfolio with a 25% allocation to Model Portfolio 4 was examined at the five-year horizon.

31. For the purpose of this analysis, the scenarios assume that 25% of the GEF Trust Fund is invested in Model Portfolio 4. The level of exposure to equity risk would depend on the amount allocated to Model Portfolio 4.

32. The maximum equity allocation within Model Portfolio 4 will be no more than 20% at any time, with the actual level selected such that Model Portfolio 4 conforms to the World Bank Board approved risk limits over the five-year investment horizon. Hence, if, for example, an allocation to Model Portfolio 4 were set up to account for no more than one quarter of a trust funds aggregate liquidity, the total exposure to equity risk would be less than 5% (20% of 25%) of the fund's total assets. This is a conservative overall exposure level to equity risk for funds participating in Model Portfolio 4. In addition, the exposure within Model Portfolio 4 is optimized taking into account the volatility of the participating asset classes at any given point in time.

33. As such for the GEF Trust Fund, to comply with the risk limits under current market conditions, no more than 10% (within the maximum limit of 20%), or USD 85 million, of Model Portfolio 4 would be allocated to ESG equities. The USD 85 million allocation to ESG equities would represent approximately 2.5% of GEF's current total liquidity.

34. Under each scenario, the risk/return profile of the portfolio is improved since the expected return increases (by approximatively 15 basis points or USD 5.07 million per annum) and the 99% CVaR is improved (and remains inside the policy constraint of -1%) at the 5-year horizon. The scenarios and the associated expected risk and return profiles for the GEF Trust Fund's investment portfolio including a 2.5% allocation to ESG equities are presented in Figure 6.

Figure 6: Simulated Liquidity Distribution and Risk/Return Statistics for an Allocation to Model Portfolio 4 within the GEF Trust Fund

Model Portfolios 0 and 1			
GEF Holdings	$ 325 million		
		Current Scenario	**Forward Scenario**
Expected Return		1.35%	1.38%
Volatility		0.44%	0.45%
CVaR Return		0.28%	0.21%
Probability of Negative Return		0.05%	0.10%
Model Portfolio 2			
GEF Holdings	$ 2,239 million		
		Current Scenario	**Forward Scenario**
Expected Return		1.54%	1.85%
Volatility		0.71%	0.73%
CVaR Return		1.09%	1.86%
Probability of Negative Return		0.20%	<0.1%
Model Portfolio 4			
GEF Holdings	$ 855 million		
		Current Scenario	**Forward Scenario**
Expected Return		1.70%	2.45%
Volatility		2.01%	2.13%
CVaR Return		-2.75%	0.78%
Probability of Negative Return		2.20%	0.20%
GEF Weighted Average Annual Returns		**1.56%**	**1.96%**
Estimated Annual Increase in Investment Income		**$1.35 million**	**$5.07 million**

VII. Cost Considerations

35. A preliminary cost estimate of an indexed approach would include: i) equity manager's fee of approximately 6 basis points (0.06%) which typically would have a minimum fee of approximately USD 50,000 per annum; and ii) custodian's fee of approximately USD 25,000 per quarter plus USD 30,000 in transaction costs for each funding/liquidation event. Detailed negotiations (after a tender) with the relevant investment manager would be required to determine a more precise fee estimate. These fees would apply only to the equities portion of the portfolio;

fees for the fixed income portfolio would remain unchanged at 3.5 basis points of the average fund balance per year.

36. Should the GEF Council prefer a more customized index than those suggested in this note, the costs of implementation would increase significantly with the level of customization and the gains from diversification may be reduced accordingly.

VIII. Conclusion

37. In June 2016, the GEF Council noted the potential diversification benefits of making an allocation to Model Portfolio 4, which would contain a limited allocation to developed market equities. Should the GEF wish to adopt a more diversified investment strategy through an allocation to Model Portfolio 4, there are environmentally aware and implementable options available through which to gain exposure to ESG equities.

38. To determine the potentially most appropriate vehicles through which to gain ESG equities exposure within Model Portfolio 4, the primary consideration was placed on the GEF's mandate, investment objectives and risk tolerances, and the potential impact on the risk and return characteristics of the GEF's investment portfolio. Based on these considerations, two indices that appear to be most suitable for the GEF Trust Fund: the MSCI Fossil Fuel Free and MSCI World Low Carbon Target, as they broadly align with the GEF's mandate of protecting the environment and are likely to provide diversification benefits to the GEF's current fixed income investment portfolio.

39. Significant challenges remain, however, with perhaps the greatest being that neither of these indices offer a perfectly "clean" solution, and that insufficient historical data is available to validate the credibility and reliability of the carbon and environmental ratings and metrics or enable the market to gain a comprehensive understanding of the ESG equity market's behavior in different market conditions.

40. For these reasons, the GEF could benefit from waiting a couple more years before considering an investment in ESG equities. The World Bank will continue to monitor developments in the ESG equity market and will bring this matter to the GEF Council at an opportune time.

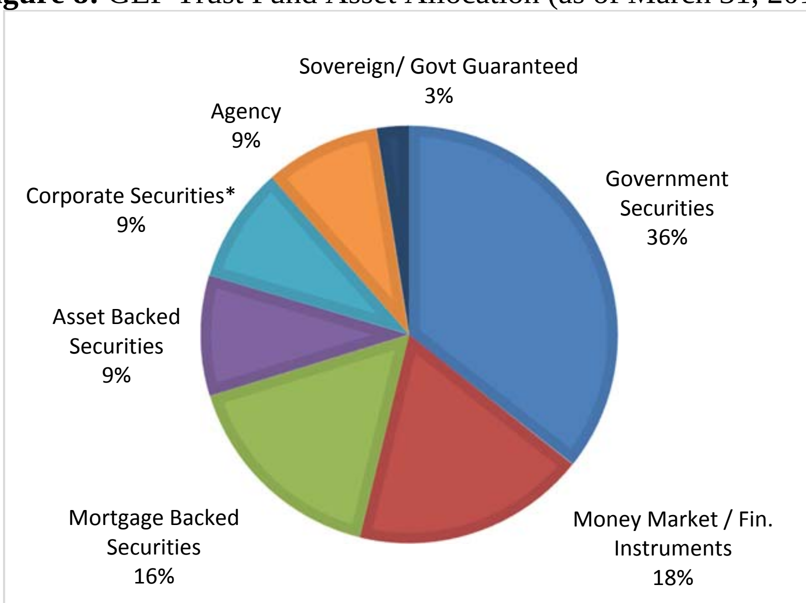
Annex 1: Investment Management of the GEF Trust Fund

The investment objectives for the GEF Trust Fund are to optimize investment returns subject to preserving capital and maintaining adequate liquidity to meet foreseeable cash flow needs, within a conservative risk management framework[16]. In line with these objectives, approximately 85% of the GEF Trust Fund's liquid assets are invested in Model Portfolio 2, with the remaining balance in Model Portfolios 0 and 1. The Trustee rebalances the overall portfolio on a quarterly basis to ensure adequate liquidity is available to meet projected cash flow needs. The investment characteristics of the three Model Portfolios and the overall asset allocation of the GEF Trust Fund's portfolio are shown in Figures 7 and 8 below.

Figure 7: Investment characteristics of the Model Portfolios in which the GEF Trust Fund invests

Model Portfolio	Model Portfolio 0	Model Portfolio 1	Model Portfolio 2
Investment Objective	Ensure timely availability of liquidity	Enhance returns subject to preservation of capital and the risk tolerance over the investment period.	
Investment Horizon	3 months or less	1 year	3 years
Eligible Trust Funds	All Trust Funds	Funds with limited appetite for investment return volatility on a year to year basis	Larger Trust Funds with relatively predictable cash flow projections and stable liquidity over 3 years
Eligible Investment Products	Cash	Cash, short – intermediate government bonds	Cash, short – intermediate government bonds, US Agency MBS

Figure 8: GEF Trust Fund Asset Allocation (as of March 31, 2017)



* The Corporate Securities category comprises AAA-rated Euro Agency and government bonds/notes.

[16] Risk tolerance is defined as the expected maximum loss, as measured by the Conditional Value-at-Risk (CVaR), at the portfolio's investment horizon, not to exceed 1% at portfolio's investment horizon, with 99% confidence.

Annex 2: MSCI Carbon Reporting Definitions

Carbon Emissions (per million dollars invested)

What is the normalized carbon footprint per $M invested of a portfolio tracking the index?

Total Carbon Emissions are directly linked to the market value of the portfolio. For instance, if two portfolios have identical securities and weights, but one has twice the market value, then the larger one will also have twice the Total Carbon Emissions. This presents limitations when comparing the carbon footprint between portfolios or against a benchmark index. Presenting the footprint as a normalized figure enables cross-portfolio comparison. Carbon Emissions is identical to Total Carbon Emissions, except that rather than providing the total carbon emissions for the portfolio it normalizes the carbon emissions for every $1,000,000 of market value. As a normalized metric, it can be used to accurately compare portfolios of any size.

Carbon intensity

How efficient is a portfolio tracking the index in terms of total carbon emissions per unit of output?

Carbon Intensity expresses the carbon efficiency of the portfolio and allows institutional investors to measure the volume of carbon emissions per dollar of sales generated by portfolio companies over a specified time frame. This metric adjusts for company size and is a more accurate measurement of the efficiency of output, rather than a portfolio's absolute footprint. Although efficiency at the company level is best measured using industry-specific measures of output (e.g. per tons of steel, miles flown, MWh of power generated, etc.), sales are used in the portfolio context as the best available measure of output when comparing across industries. Portfolio Carbon Intensity is calculated by dividing the portfolio's total Carbon Emissions (apportioned by the investor's ownership share) by the portfolio's total Sales over that same period of time (also apportioned by the investor's ownership share).

Potential Carbon Emissions

Potential Carbon Emissions represent the potential emissions of the companies in the index as represented by their fossil fuel reserves and calculated using the methodology of the Potsdam Institute for Climate Impact Research[17]. Similar to Carbon Emissions, normalizing the potential carbon emissions enables cross portfolio emissions for portfolios of any size.

[17] See Potential emissions of CO2 and methane from proved reserves of fossil fuels: An Alternative Analysis.

Annex 3: MSCI Equity Indices with ESG Investment Approach, Description and Methodology

	MSCI World	MSCI World ex Fossil-Fuels	MSCI World Low Carbon Target
ESG Investment Approach	N/A	Negative/Exclusionary Screening	Positive/Best-in-class Screening/ESG Integration
Description	The MSCI World Index captures large and mid-cap representation across 23 Developed Markets countries. With 1,650 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.	The MSCI World ex Fossil Fuels Index is based on the MSCI World Index, its parent index, and includes large and mid-cap stocks across 23 Developed Markets countries. The index represents the performance of the broad market while excluding companies that own oil, gas and coal reserves. It is a benchmark for investors who aim to eliminate fossil fuel reserves exposure from their investments due to concerns about the contribution of these reserves to climate change.	The MSCI World Low Carbon Target Index is based on the MSCI World Index and includes large and mid-cap stocks across 23 developed markets countries. The Index is a benchmark for investors who wish to manage potential risks associated with the transition to a low carbon economy. The index aims for a tracking error target of 0.3% while minimizing the carbon exposure. By overweighting companies with low carbon emissions (relative to sales) and those with low potential carbon emissions (per dollar of market capitalization), the index reflects a lower carbon exposure than that of the broad market.
Methodology	Based on the MSCI Global Investable Indexes Methodology — a comprehensive approach to index construction that allows for meaningful global views and cross regional comparisons across all market capitalization size, sector and style segments and combinations. This methodology aims to provide exhaustive coverage of the relevant investment opportunity set with a strong emphasis on index liquidity, investability and replicability. The index is reviewed quarterly with the objective of reflecting change in the underlying equity markets in a timely manner, while limiting undue index turnover.	The MSCI World ex Fossil Fuels Index is reviewed on a quarterly basis to coincide with the regular Semi-Annual and Quarterly Index Reviews of the MSCI Global Investable Market Indexes. At index reviews, all companies in the underlying universe are reviewed for inclusion in the MSCI World ex Fossil Fuels Indexes. Any constituent identified as having fossil fuel reserves (proved & probable coal reserves, oil & natural gas reserves) that are used for energy purposes is excluded. Any constituent that is deleted from the Parent index as a result of an index review is also deleted from the MSCI World ex Fossil Fuels Index.	The MSCI Global Low Carbon Target Index is constructed using an optimization process that aims to achieve replicability and investability, subject to the following optimization objective and constraints: i) minimize the Carbon Exposure subject to a tracking error constraint of 30 basis points relative to the Parent Index; ii) the maximum weight of an index constituent will be restricted to 20 times its weight in the Parent Index; iii) the country weights in the MSCI Global Low Carbon Target Index will not deviate more than +/-2% from the country weights in the Parent Index; iv) the sector weights in the MSCI Global Low Carbon Target Index will not deviate more than +/-2% from the sector weights in the Parent Index, with the exception of the Energy Sector where no constraint is applied.