Case Study
ESG

September 2023

A Customized Climate Bond Strategy
Addressing Climate Integration Needs

ESG is dynamic and fast moving. As investors and asset owners seek to integrate ESG criteria into their existing portfolios, they are collaborating with asset management firms such as State Street Global Advisors to facilitate efficient allocation and put ESG into motion thoughtfully, with various risk and return parameters considered. New technology and big data are creating tremendous opportunities for investors while also disrupting conventional approaches to portfolio management.

Scenario

Investors are increasingly seeking investment strategies which have the dual aim to a) minimize tracking error against a strategic benchmark while also b) striving to promote decarbonization in the real world and facilitate the low-carbon transition.

In this example, we received a request from a pension client to integrate ESG into its global corporate bond portfolio. The client wished to continue tracking a bespoke (non-ESG) benchmark and therefore aimed to integrate their ESG objectives within the portfolio construction process. Key criteria for the client were delivering on their defined ESG objectives while tightly controlling risks.

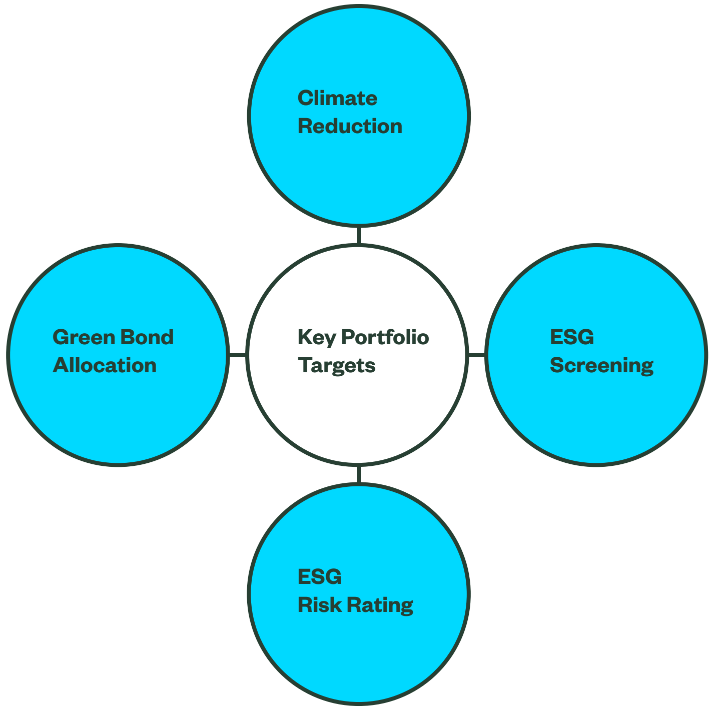
Determining ESG Objectives

State Street Global Advisors partnered with the pension fund to determine measurable ESG objectives for the portfolio. Key portfolio targets centered around:

- Climate Reduction
- ESG Screening
- ESG Risk Rating
- Green Bond Allocation

The client also aimed for flexibility, with a requirement that State Street Global Advisors can adjust the restrictions, targets and inputs of the portfolio, as requested by the client.

Figure 1
Mesasurable ESG Objectives



Given the above objectives, the client was aiming to make a sizable shift in the portfolio's ESG profile. However, the client wished to maintain compliance with rules related to their investment process, including minimal tracking error against a bespoke benchmark of 0.50% (both ex-ante and ex-post measured over a 12-month rolling period); a sub-sector level 2-3% deviation constraint; and an issuer-level 1% max overweight constraint versus the reference benchmark.

Overcoming ESG Data Challenges

Market participants have long discussed the difficulties in managing ESG data, which lacks a consistent and commonly accepted materiality framework, and relies on opaque ESG scoring methodologies of existing data providers. Numerous vendors provide ESG scoring, and the scores for individual securities can vary widely from one data provider to the next (see The ESG Data Challenge). Inputs from multiple data providers help broaden the overall coverage universe and reduce the potential bias that a singular data provider may carry.

Our transparent, multi-source data architecture, along with our own proprietary ESG insights, allows us expertise and flexibility in data collection. Datasets from multiple providers are onboarded and maintained in our central database, which better facilitates the application of comprehensive, targeted screening; reduces potential biases; maps to our multi-level mapping architecture; and disseminates information to all our investments teams, portfolio management systems, and platforms across the firm (Figure 2). For this client, our data architecture allowed us the necessary flexibility to align the data source to the vendor of its choosing, helping eliminate discrepancies in data reporting between us, as the investment manager, and the client's own reporting.

Figure 2
We Are Flexible in Our Use of Data Providers

ESG Data Platform

General ESG	Climate Carbon	Business Involvement / Screening Capabilities	Governance	Real Assets
• Sustainanalytics ESG Risk • Sustainanalytics Country Risk • Moody's V.E. • ISS ESG • Refinitiv • MSCI ESG Ratings	• Climate Bond Initiative Green Bonds • MSCI Climate Suite • S&P Trucost • FTSE LCE • ISS Climate Suite	• MSCI BISR • Sustainanalytics Product Involvement • Sustainanalytics Global Standards Screening • Sustainalytics Controversial Weapons Radar • Sustainalytics Controversies	• BoardEx • ISS Governance	• GRESB*

* Through June 2023.

Summary of Analysis and Recommendations

An Indexing Framework

We engaged the client with our flexible Sustainable Climate Bond Framework, in which we aim to marry ESG and climate improvements with our efficient exposure management indexing process. The State Street Global Advisors Sustainable Climate Bond Strategy seeks to enable investors to quickly improve a portfolio's carbon profile and reduce climate risk while maintaining target returns. The Sustainable Climate Bond framework adopts a systematic mitigation and adaptation approach that targets Paris-aligned reductions in carbon emissions relative to the benchmark.

Mitigation refers to reducing the current and future flow of heat-trapping greenhouse gases[1] into the atmosphere, while **adaptation** denotes increasing exposure to companies. Adaptation is the reallocation of capital towards green-labelled bonds, climate-aligned bonds, and corporate bonds issued by companies that work proactively to minimize their exposure to actual or expected physical, economic and regulatory impacts of climate change and the transition to a low-carbon economy (Figure 3). In addition, the framework applies a screen based on an assessment of an issuers adherence to ESG criteria (i.e. international norms in relation to environmental protection, human rights, labour standards, anti-corruption, controversial weapons and tobacco).

Crucially, the framework is flexible, and therefore enables client preferences, risk tolerances and other investment requirements to be incorporated into the investment strategy.

Figure 3 **The Mitigation/Adaptation Approach Combines Managing Risks with Capturing Opportunities**

	Mitigation				**Adaptation**	
	Current and Future Risk Exposures				**Resiliency**	**Opportunities**
Objectives	Minimize Carbon Emissions	Minimize Fossil Fuel Reserves	Minimize Brown Revenues	Minimize ESG Risks	Build Resilient Portfolio	Maximize Green Bonds & Climate-Aligned Bonds
Metrics	Carbon Intensity; Direct + First Tier; Indirect Emissions	Total GHG emissions from fossil fuel reserves in million tonnes CO_2	Revenues from extractives activities	1. UNGC principles 2. Controversial weapons 3. Swedish Ethical Council 4. Severe Controversies 5. R-Factor Laggards 6. Thermal Coal 7. Arctic Oil & Gas 8. Oil Sands 9. Tobacco	Adaptation Score on climate change preparedness.	Securities that are present in the Climate Bonds Initiative Labelled Green Bonds and Climate-Aligned Database.
Units	Metric tons CO_2e / $M revenues	Metric tons	%		Scaled range 0–1	
Definition	Greenhouse gas emissions over which the company has direct control or derives from suppiers, divided by revenue.	Total embedded CO_2 emissions for the company in a financial year.	Percentage of revenues from brown sectors and extractive sectors with high embedded carbon emissions.	Norms-based, controversy risk and controversial product involvement screening.	Position on climate change; greenhouse gas reduction action plans.	Bonds which qualify as green, according to the Climate Bonds Initiative Taxonomy.

Source: State Street Global Advisors, as of May 10, 2023.

EU Paris-Aligned Benchmarks (PABs) and Climate Transition Benchmarks (CTBs) are investment benchmarks that incorporate specific objectives aimed at the reduction of Greenhouse Gases (GHG) emissions and the transition to a lower-carbon economy. In our view, these benchmarks' key limitations, which may make them not suitable for certain investors, include:

- **Flexibility** Indices typically have less flexibility to rapidly change systematic restrictions and targets once set.
- **ESG Data Sources** To define the eligible investment universe, climate benchmarks are typically limited to one/few ESG data sources that are available to the relevant index provider.
- **Cost** ESG indices may demand a higher index license fee versus a standard non-ESG index.
- **Transparency** Where the index is constructed using optimization, it may be less transparent on what inclusions/ exclusions and under-/over-weighting are driven by ESG thresholds, versus by optimizer factors.
- **Turnover** Owing to poor visibility of forward-looking investment universe visibility, especially during times of fundamental ESG data rebalancing, there is great likelihood of higher turnover versus the target benchmark.
- **Equity-centric** In our research, PAB and CTB frameworks may be efficiently applied by equity index providers, but with only minor adjustments made for fixed income indices (e.g., adjustments to the optimizer to account for duration, credit quality and sector risks). While offerings are constantly improving, we found only one index provider currently applying special treatment for ESG-labelled bonds with environmental, climate or other similar sustainability related investment objectives (e.g. green bonds).
- **Screening Rebalance Frequency** Some climate benchmarks may only update the ESG screen once every 12 months.

The Sampling Process

Stratified sampling is the foundation of our efficient exposure management and portfolio construction process. Stratified sampling involves matching the benchmark's defining characteristics along key risk dimensions (such as currency, yield curve, duration, sector, credit, issuer and liquidity); minimizing turnover and associated transaction costs; as well as adding value through new issue premium and relative value security selection, when possible. While our investment approach is highly process-driven to aim for tight risk alignment, human judgement is ultimately behind every investment decision. We deliberately allow small degrees of latitude to our investment team and traders to seek to add incremental value throughout the process.

All processes drive toward our objective of delivering the index returns as efficiently as possible. We seek to do so while constructing and maintaining the portfolio to meet the client's required ESG constraints and objectives, as well as tightly controlling exposure to several key risk dimensions and tracking error requirements.

Outcomes

In this case study, the client chose to integrate climate objectives into a bespoke portfolio in a risk-aware way to balance tradeoffs between carbon-related investment objectives and risk exposures in their customized non-ESG benchmark. The flexible nature of the State Street Sustainable Bond Framework enabled the client to customize inputs and targets to meet their requirements. Custom requirements included, but were not limited to:

- **Climate Targets** Set as a 30% carbon reduction by December 31, 2024, and a 7.6% year-on year decarbonization pathway.
- **ESG Exclusions** Based on State Street Global Advisors' multisource Product Involvement and Controversy Screening database, as well as a client-directed exclusions list (provided quarterly).
- **Green Bond Targets** Allocation increased to more than two times the weighting of green bonds in the benchmark.
- **ESG Rating** Required to be equal or better than that of the benchmark.
- **Data Vendors** To include a client-preferred carbon data provider (ISS ESG) and a client-preferred ESG risk rating provider (Sustainalytics).
- **Portfolio Controls** Incorporated a tracking error target of 0.50% against a bespoke benchmark (both ex-ante and ex-post measured over a 12-month rolling period); a standard deviation constraint of sub-sector level 2-3%, and an issuer-level constraint of 1% maximum overweight.

In addition, the client saw added value in allowing State Street Global Advisors to perform the transition/reshaping of its current portfolio. Looking at the portfolio so far,[2] **the client has reached its desired ESG objectives at an ex ante tracking error well within stated targets.**

Contact Us

For more information on our indexed fixed income offerings and insights, please visit our website: Modern Fixed Income. If you would like to get in touch with our Fixed Income ESG experts, please contact us at GlobalFixedIncomePortfolioStrategists@ssga.com.

Endnotes

1 GHG emissions, as measured by carbon intensity and fossil fuel reserves.

2 As of June 22, 2023. Note: Past performance is not a reliable indicator of future performance.

About State Street Global Advisors

For four decades, State Street Global Advisors has served the world's governments, institutions and financial advisors. With a rigorous, risk-aware approach built on research, analysis and market-tested experience, we build from a breadth of index and active strategies to create cost-effective solutions. And, as pioneers in index, ETF, and ESG investing, we are always inventing new ways to invest. As a result, we have become the world's fourth-largest asset manager* with US $3.62 trillion† under our care.

* Pensions & Investments Research Center, as of December 31, 2021.
† This figure is presented as of March 31, 2023 and includes approximately $65.03 billion USD of assets with respect to SPDR products for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) acts solely as the marketing agent. SSGA FD and State Street Global Advisors are affiliated. Please note all AUM is unaudited.

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Equity securities may fluctuate in value and can decline significantly in response to the activities of individual companies and general market and economic conditions.
The returns on a portfolio of securities which exclude companies that do not meet the portfolio's specified ESG criteria may trail the returns on a portfolio of securities which include such companies. A portfolio's ESG criteria may result in the portfolio investing in industry sectors or securities which underperform the market as a whole.
Estimated and unaudited ESG AUM as of March 31, 2023 for client mandates in the following categories specified in the SSGA ESG Account Identification Policy:
Negative ESG Screen: A "Negative ESG Screen" (also known as an exclusionary screen) is a screen incorporated into the investment strategy utilized for the management of a portfolio that results in the exclusion from the portfolio of securities of issuers (whether part of a certain sector or industry), where the exclusion of such securities is based on the intent to eliminate from the portfolio securities that fail to satisfy specific ESG criteria. Negative ESG Screens include but are not limited to SSGA Point of View ("POV") screens, norms-based screens, Socially Responsible Investing (SRI) screens, and screens provided by other third-parties.
Positive ESG Screen: A "Positive ESG Screen" is a screen incorporated into the investment strategy utilized for the management of a portfolio that intentionally includes securities of issuers identified as having positive ESG performance (including positive performance of sub-components of ESG such as environmental, climate or social characteristics) relative to the issuer's industry or sector peers. Positive ESG Screens include but are not limited to targeting an overall improvement of a portfolio's ESG profile as compared to a benchmark or stated investment guideline, measured in ESG scores, or investing only in issuers within an industry or sector that score higher within that industry or sector than the issuer's peers.
Third Party ESG Index: An index is deemed to be a "Third Party ESG Index" if the index methodology incorporates ESG factors or characteristics that are utilized by the third-party index provider to determine which securities are included as index constituents

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