Insights
Multi-Asset Solutions

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Climate Change Aware, Alpha-Oriented Portfolio Construction

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A core, beta-based climate strategy, combined with a satellite, alpha-oriented high-conviction climate strategy, demonstrated alpha and diversification benefits for a controlled tracking error.

ESG and climate change are at the top of many political and regulatory agendas, making the task of institutional investing much more complex. Questions being asked by institutional investors include:

- Which climate change measures should be used, and should they be forward-looking, or rely on historical data, or be a blend of both?
- Can the same climate metrics be applied to different asset classes and therefore allocations?
- How should climate change allocations be best applied: through exclusions, optimisation or high conviction?
- What tracking error (TE) allowances should be assigned, and how much diversification should there be?

Alpha and Beta Solutions

For institutional investors seeking answers, i.e., those who wish to integrate their strategic views on climate change into their portfolios, State Street Global Advisors offers both alpha- and beta-oriented solutions. Our alpha satellite is the Global Climate Transition strategy, managed by our Fundamental Growth & Core Equity (FGC) team; this strategy targets an excess return of 3% over the MSCI World Index.[1] Our beta core is the State Street Sustainable Climate World Equity strategy, which provides broad-based exposure optimised for climate and is benchmarked to the MSCI World Index (see Figure 1).

The Global Climate Transition strategy is a concentrated, high-conviction approach that seeks to generate alpha by selecting securities based on our FGC analysts' proprietary and forward-looking climate transition scores. The objective of this strategy is to select 30–40 companies that are climate-transition leaders and influencers in their respective industries.

The State Street Sustainable Climate World Equity strategy is much broader and is fully rules-based, with climate change parameters that are more historically focussed.

The two strategies are highly complementary in terms of investment style and conviction. This paper first provides an overview of the two strategies' climate change approach and metrics. It then demonstrates how they can work together effectively in a variety of core-satellite portfolio allocations.

Figure 1
Investment Approaches

	State Street Sustainable Climate World Equity Strategy	**State Street Global Climate Transition Strategy**
Description	A systematic approach which, through optimisation, minimises the ex-ante tracking error and maximises reduction of carbon-intensity (subject to climate change parameter constraints) for the given benchmark universe	High-conviction approach based on in-depth fundamental research and demonstrated stock-picking skills Company-specific risk drives performance, rather than market beta
Benchmark	MSCI World	MSCI World (or MSCI ACWI)
Number of Holdings	~500	30–40
Return Target	Beta: No excess return target	Alpha: Excess return target of +300 bps
Approach	Bottom-up	Bottom-up
Holdings	Broadly diversified	Concentrated
Orientation	Mostly historical	Mostly forward-looking
Tracking Error (ex-ante)	1%	4–8%
Target Information Ratio	0	0.5
Exclusion Rules	Yes: ~10% of MSCI World Index is excluded	None
Alignment with SFDR	Conforms to Article 9, wherever Fund is available.	Will conform to Article 9 when offered as a Fund

Source: State Street Global Advisors.

Climate Change Indicators and Exclusions

Select ESG and climate change indicators are applied to the Sustainable Climate World Equity and Global Climate Transition strategies. Detailed information on the indicators referenced can be found in the Glossary.

Both strategies exclude for controversial weapons and for violations as reported by the United Nations Global Compact and Swedish Ethical Council.

With respect to climate change (the focus on the "E" within ESG), both strategies screen for activities related to Oil & Gas Exploration, Thermal Coal, Oil Sands, Artic Drilling and Shale Energy.

The Sustainable Climate World Equity strategy excludes companies in these categories, resulting in the removal of 131 securities or 10.1% of the MSCI World universe from consideration.[2] The Global Climate Transition strategy does not use exclusion rules but, rather, FGC analysts can choose not to invest in these areas on a fundamental basis, i.e., finding them at present unattractive in terms of quality, sustainable growth and climate transition readiness.

Climate Change Parameters: Sustainable Climate World Equity Strategy

The Sustainable Climate World Equity strategy is fully rules-based. After exclusion screening, optimisation is applied to the remaining MSCI World Index investment universe so that carbon-intensity is minimised (as are transaction costs) under the following set of constraints:

- Ex-ante active risk below 1%
- Historical climate change parameters:
  - Fossil fuel reserves reduction of 90%
  - Brown revenue score reduction of 90%
  - Green revenue score increased by 300%
- Forward-looking climate change parameters:
  - Adaptation Z-score improvement of 0.25

Other typical portfolio implementation constraints are included but are not related to climate change parameters.

The strategy relies mostly on historical data and can be considered pragmatic, as the strategy can be easily adjusted as new information comes in. However executing the needed adjustments may lead to an increased level of turnover, all else equal.

Climate Change Parameters: Global Climate Transition Strategy

The Global Climate Transition strategy does not take into account historical climate change data in its stock selection process. However, R-Factor™ (see Glossary) and other historical data are important references in the screening process and in portfolio managers' discussions with the FGC team's sector analysts. See Figure 2.

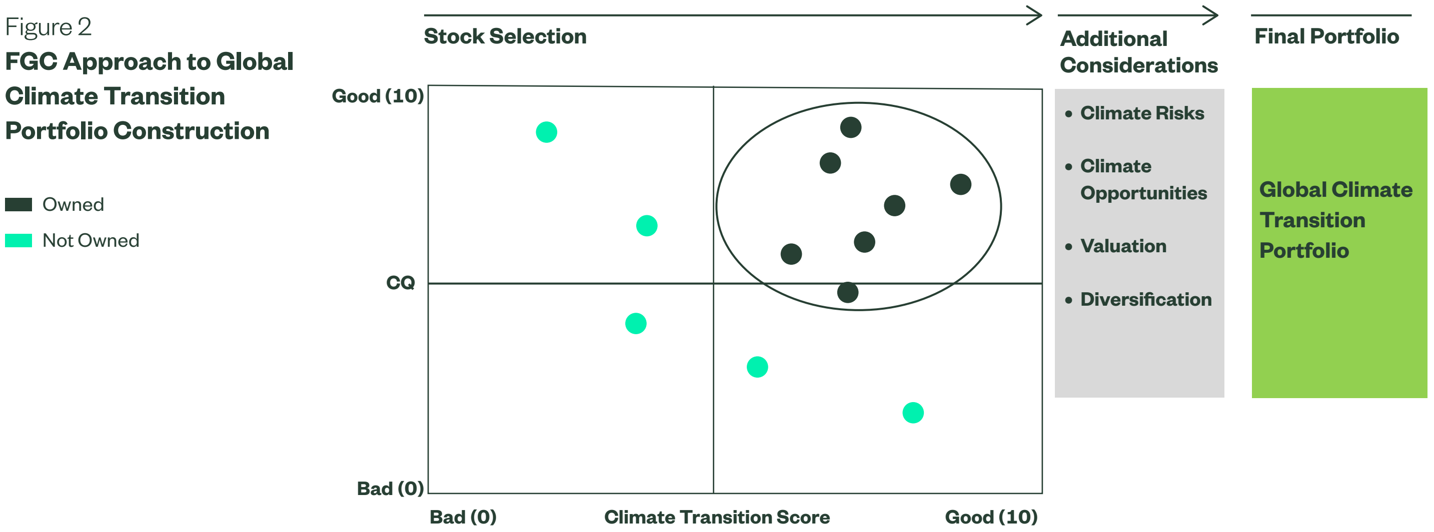
The high-conviction Global Climate Transition strategy picks 30 to 40 stocks from the reference universe (MSCI World or MSCI ACWI) expecting to generate on average +300bps of alpha over a three-year investment cycle. The identified stocks will be characterised as having:

1. A Growth at a Reasonable Price (GARP) valuation
2. A high Confidence Quotient (CQ) score. The qualitative CQ process explicitly incorporates ESG features and has been used by FGC for investment analysis since the early 2000s
3. A strong positioning for the transition to Net Zero, with this assessed qualitatively through a proprietary climate scorecard

The first two metrics derive from longstanding analytical tools used by the FGC team to deliver strong and robust investment portfolio performance [4]. The third metric has been recently developed by the FGC team.

Figure 2

FGC Approach to Global Climate Transition Portfolio Construction



Source: State Street Global Advisors for Illustrative purposes only.

Figure 3

Climate Change Metrics for State Street Climate Strategies and MSCI World Benchmark

As of 30 June 2022

	Benchmark MSCI World	State Street Sustainable Climate World Equity Strategy	State Street Global Climate Transition Strategy
Total # of Securities	1,513	457	30
Ex-ante Tracking Error (%)	—	1.1	5.4
Historical Climate Change Indicators			
Carbon-Intensity — Direct + First Tier Indirect tCO_2e/$M USD	215.1	85.1	211.7
Carbon-Intensity — Reduction (%)	—	-60.4	-1.6
Weighted Average Carbon-Intensity — WACI (TCFD)	162.05	53.26	124.16
WACI — Reduction (TCFD) (%)	—	-67.1	-32.7
Total Reserves Emissions	157.34	15.92	0.00
Brown Revenue	2.61	0.26	1.22
Green Revenues	3.15	12.59	5.54
Forward-Looking Climate Change Indicators			
Adaptation Score (the higher the better)	0.65	0.73	0.76
MSCI's Implied Temperature Rise (ITR) in Degrees Celsius (the lower the better)	2.7	2.4	2.1

Source: MSCI, State Street Global Advisors.

The Sustainable Climate World Equity strategy demonstrated a strong 60.4% carbon-intensity reduction, while for the Global Climate Transition strategy there was only a reduction of 1.6%. However, the Global Climate Transition strategy is not so much concerned with current carbon-intensity scores, but rather it is concerned with the *robustness and adaptation potential* of a firm in a forward-looking climate transition framework.

The ex-ante tracking error for the Sustainable Climate World Equity strategy was just above 1%, which corresponds to the optimisation constraint of the strategy. The high-conviction active Global Climate Transition strategy — which selects only 30 to 40 stocks out of over 1500 stocks — has a higher TE at 5.4%.

Core-Satellite Portfolio Construction

We believe the high-conviction nature of the Global Climate Transition strategy makes it suitable for use as a satellite in core-satellite portfolio construction. Assuming that the core is tracking the MSCI World Index, the size of the satellite allocation can be adjusted to achieve a targeted tracking error set by the institutional investor. For example, for a 75% weight in the MSCI World Index and a 25% weight in the Global Climate Transition strategy, the TE would be just 1.3x, with a return target alpha of 75 bps per annum. See Figure 4.

The broad Sustainable Climate World Equity strategy also works well as a core allocation, with the Climate Transition strategy as a satellite allocation, but for different reasons:

- The Sustainable Climate World Equity strategy contains a large number of securities and by construction has a low TE versus MSCI World.
- Use of the Sustainable Climate World Equity strategy versus the MSCI World Index could be seen as a better reflection of an investor's strategic decision to implement a climate change component across an entire equity portfolio (not just the satellite allocation).
- With the Sustainable Climate World Equity strategy at the core, the overall portfolio can target significant carbon reduction.
- The Climate Transition strategy can help achieve an excess return objective at the total equity portfolio level.

Figure 4
Key Metrics for Various Core-Satellite Constructions
As of 30 June 2022

Universe/Strategy	Ex-Ante Tracking Error (%)	Ex-Ante Total Risk (%)	Excess Return Target (bps per annum)*	Realized Carbon-Intensity Reduction (%)	Estimated Implied Temperature Rise
MSCI World	x	20.95	0	0	2.7
Sustainable Climate World Equity	1.19	20.48	0	60.4	2.4
Global Climate Transition	5.40	21.69	300	1.6	2.1
75% MSCI World 25% Global Climate Transition	1.35	21.01	75	0.4	2.6
50% MSCI World 25% Sustainable Climate World Equity 25% Global Climate Transition	1.40	20.88	75	15.3	2.5
75% Sustainable Climate World Equity 25% Global Climate Transition	1.66	20.65	75	45.7	2.3

Source: Source: MSCI, State Street Global Advisors.
* The above targets are estimates based on certain assumptions and analysis made by SSGA. There is no guarantee that the estimates will be achieved.

We observe that for 75% Sustainable Climate World Equity and 25% Global Climate Transition, the carbon-intensity reduction is significant, while the tracking error is only slightly increased at 1.66%. Moreover, the target excess return of 75 bps, combined with a lower total risk of 20.65% versus the benchmark's total risk of 20.95%, clearly demonstrates diversification benefits.

Bottom Line

State Street's core, beta-based strategy and our satellite, alpha-oriented high-conviction strategy both deliver climate benefits. Used together, they can deliver alpha and diversification benefits for a controlled tracking error. The two strategies clearly:

- Fit well together in terms of a strategic allocation which takes climate change into consideration
- Fit well together in terms of core-satellite portfolio construction

The Sustainable Climate World Equity strategy is available in fund format and is compliant with Article 9 in the EU Commission's SFDR Directive. The Global Climate Transition strategy plans to do so once it is offered as a fund. *For more information, contact your State Street representative.*

References

[1] Climate Metrics a Primer for Investors (ssga.com).

[2] Net Zero: An Investor's Implementation Guide (ssga.com).

[3] R-Factor™ — A Transparent ESG Scoring System (ssga.com).

[4] Using Active Fundamental Equity Strategies in Core-Satellite Portfolio Construction (ssga.com).

[5] Implied Temperature Rise (msci.com).

Endnotes

1 The target is an estimate based on certain assumptions and analysis made by SSGA. There is no guarantee that the estimate will be achieved.

2 As of 30 June 2022.

Glossary

R-Factor The R-Factor [3] is an ESG indicator developed by SSGA, which aggregates and maps the ESG data sourced from different vendors to one common SASB framework. Based on R-Factor scoring, each security in the reference universe is categorised as a laggard, underperformer, average, outperformer or leader. The Global Climate Transition strategy only retains candidate securities categorised as outperformer or leader (i.e., scoring in the top two quintiles).

The Sustainable Climate World Equity strategy does not utilise R-Factor scoring in its portfolio construction.

Carbon-Intensity Direct + First Tier Indirect [1] sourced from S&P Trucost, including Scope 3 upstream, reported as CO_2e /$M revenue.

TCFD's WACI The TCFD's WACI (weighted average carbon intensity) [1] includes Scope 1 + Scope 2 carbon emissions but not Scope 3 emissions. This carbon intensity measure is therefore smaller than the Trucost definition, which includes upstream Scope 3. Scope 3 emissions are classified as not being under a company's direct control and therefore difficult for it to manage.

Fossil Fuel Reserves Fossil Fuel reserves [1] owned by companies sourced from S&P Trucost are defined as CO_2e emissions that could be generated if the proven and probable fossil fuel reserves owned by companies were burned.

Brown Revenues Realised Brown Revenues [1] sourced from S&P Trucost are defined as the percentage of revenues that a company derives from the extraction of fossil fuels, or use of fossil fuels for power generation.

Green Revenues Green Revenues [1] sourced from FTSE Russell are defined as the percentage of revenues that a company derives from greener business activities, or low-carbon technologies.

Adaptation Score The adaptation score [1] is sourced from ISS ESG, where each company within a given universe will be given a score of between 0 (expected to be least adapted) and 1 (expected to be well adapted). This score is a combination of two indicators that are qualitatively determined. The first indicator evaluates the company's position on climate change. The second indicator evaluates the existence and quality of the company's greenhouse gas emissions reduction targets and measures/action plans to achieve these targets.

Implied Temperature Model (ITR) MSCI's Implied Temperature Model [5], the ITR, translates scoring into an implied temperature rise relative to pre-industrial levels [5]. For the reference index this is 2.7deg in 2070 (assuming that today we are at 1.15deg and that the NDCs' commitments are realised); the Sustainable Climate World Equity strategy gives an improved 2.4deg, while the Global Climate Transition strategy is further improved at 2.1deg.

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- Start with rigor
- Build from breadth
- Invest as stewards
- Invent the future

For four decades, these principles have helped us be the quiet power in a tumultuous investing world. Helping millions of people secure their financial futures. This takes each of our employees in 29 offices around the world, and a firm-wide conviction that we can always do it better. As a result, we are the world's fourth-largest asset manager* with US $3.26 trillion† under our care.

* Pensions & Investments Research Center, as of December 31, 2021.
† This figure is presented as of September 30, 2022 and includes approximately $55.12 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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Responsible-Factor (R Factor) scoring is designed by State Street to reflect certain ESG characteristics and does not represent investment performance. Results generated out of the scoring model is based on sustainability and corporate governance dimensions of a scored entity.

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