



Index Overview

FTSE
Russell

FTSE Global Climate Index Series

Integrating climate change measures into benchmarks

Overview

Climate change is expected to have profound impacts on the prospects and performance of companies across a variety of industrial sectors. Many investors now regard climate change as an investment issue. In portfolio design investors increasingly want to hedge climate risks and gain exposure to upsides that climate change may bring to companies.

The FTSE Global Climate Index Series goes beyond traditional low carbon indexes by considering green revenues alongside carbon emissions and fossil fuel reserves. The index series methodology is designed to reflect the performance of a global and diversified basket of securities where their weights are varied to account for risks and opportunities associated with climate change.

Benefits

- Utilizes FTSE Russell's Green Revenues data model which is a market leading dataset of company exposure to green product and service-related revenues
- Minimizes industry bias through sector neutral application of carbon emissions adjustment
- Follows FTSE Russell's leading 'Tilt-Tilt' methodology for multi-factor index construction – delivers greater exposure to climate adjustments, in a more controlled manner, than alternative methods

The FTSE Global Climate Index Series consists of the following indexes:

FTSE Global Climate Index Series

FTSE All-World ex CW¹ Climate Index

FTSE All-World ex CW¹ ex UN Controversies Climate Index

FTSE All-Share[®] Climate Index




Russell 1000[®] Climate Index

¹ Controversial weapons

Features

- Constituent weights are adjusted based on three climate change-related measures:
 - Fossil Fuel Reserves
 - Carbon Emissions
 - Green Revenues
- FTSE Russell's Green Revenues data model can be used to incorporate potential upside from expected rise in demand for green products
- Follows FTSE Global Factor Index Series methodology to address concerns about liquidity, capacity, diversification and turnover
- A transparent, rules-based construction process

Climate change measures and definitions

Measure	Objective	Definition	Mechanism
<p>Fossil Fuel Reserves²</p> 	<p>Most carbon risk is associated with what is frequently termed “stranded assets”; these are fossil fuels reserves. To achieve the targets agreed by governments at the COP21 Summit a significant proportion of these reserves may never be usable.</p> <p>The objective is to underweight companies with fossil fuel reserves.</p>	<p>Carbon Reserve Intensity is defined as the estimated CO₂ equivalent greenhouse gas (GHG) emissions in metric tons through the use and combustion of the recoverable coal, oil and gas reserves scaled by full market capitalization (in USD).</p>	<ul style="list-style-type: none"> • Exclude Pure Coal Miners • Coal Owners: Weight adjustment of 0.25 • Oil & Gas Producers and Oil Equipment, Services & Distribution: Weight adjustment of 0.75 • Oil & Gas Producers: Tilted to lower carbon intensity reserves per dollar of equity
<p>Operational Carbon Emissions²</p> 	<p>Companies with higher levels of emissions per unit revenue (i.e. are less carbon efficient) will face greater costs assuming costs associated with GHG emissions rise.</p> <p>The objective is to over or underweight companies according to their GHG emissions.</p>	<p>The annual Operational Carbon Emissions of CO₂ equivalent GHG emissions in metric tons scaled by annual sales in excess of the ICB[®] sector average.</p>	<ul style="list-style-type: none"> • Tilt to low operational carbon emissions (relative to Sector average) • Sector neutral adjustment
<p>Green Revenues</p> 	<p>The objective is to overweight companies providing solutions to environmental challenges, that are part of the transition to a green economy.</p>	<p>Green Revenues as a percentage of total revenues</p>	<ul style="list-style-type: none"> • 1+ Minimum Proportion of Green Revenues • Companies with no Green Revenues have a neutral adjustment of 1

² Fossil Fuel Reserves and Operational Carbon Emissions data is sourced from Trucost

Index Construction Process

Starting universe

Start with market capitalization weighted index:

- FTSE All-World Index
- FTSE All-Share Index
- Russell 1000 Index

Step 1

Exclude companies

For the FTSE All-World ex CW Climate Index, exclude companies that produce 'controversial weapons': Cluster Munitions, Anti-Personnel Mines, chemical or biological weapons.

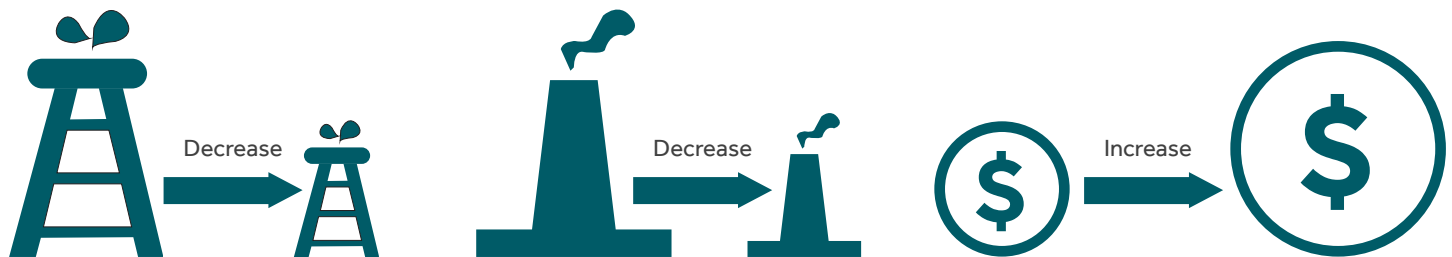
For the FTSE All-World ex CW ex UN Controversies Climate Index, exclude companies that potentially breach the United Nations Global Compact (UNGC) principles which are available on the United Nations Global Compact website.

The exclusion step only applies to the FTSE All-World ex CW Climate Index and the FTSE All-World ex CW ex UN Controversies Climate Index, as exclusions do not apply to all indexes in the series.

Step 1 Step 2

Translate scores into index weights

Decrease the weight of constituents based on their exposure to fossil fuels or carbon emissions and increase weight of constituents with Green Revenues.



Step 1 Step 2 Step 3

Narrow index and constrain final weights

Remove stocks which do not contribute to the overall factor objective, whilst ensuring that diversification constraints are not breached.

The following constraints are applied during this process:

- Country and Industry weight constraints
- Maximum stock level capacity ratio
- Minimum stock weight

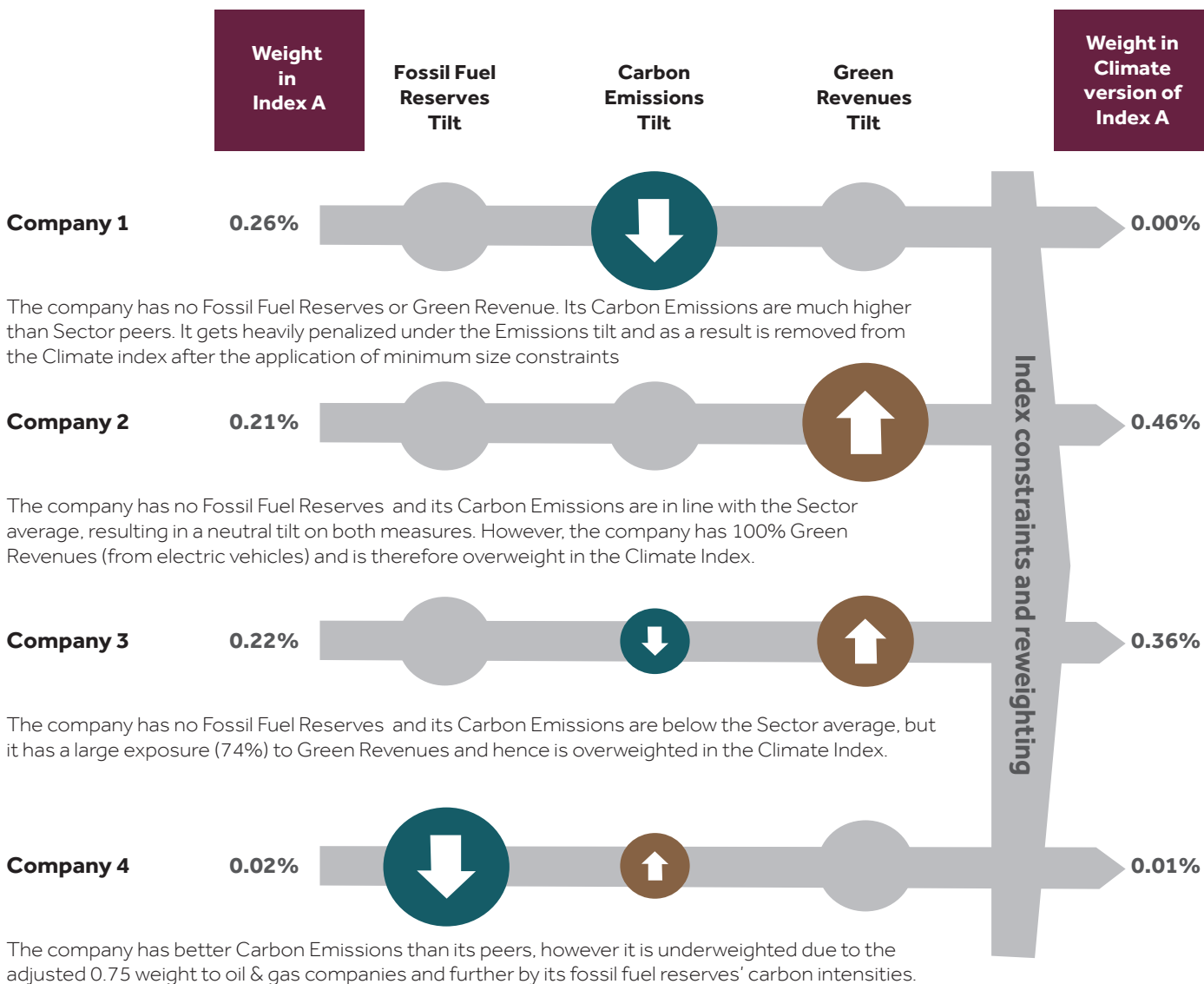
Step 1 Step 2 Step 3 Step 4

Publish and Review Index

The index is reviewed semi-annually in September and March to update for newly eligible stocks, changes in exposure to fossil fuels, carbon emissions and green revenues.

A case study: Tilt-tilt methodology

Constituent weights are derived using FTSE Russell's 'Tilt-Tilt' methodology. Factor scores are combined with the underlying market capitalization weight (or other starting universe) to create a factor weight for each constituent. The weight is rescaled (to sum to 100%), the index can be narrowed, and constraints are applied to arrive at the final weight in the factor index.



Source: FTSE Russell. For illustrative purposes only.

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