

# ALTIScope

## Carbon Investing: a burning issue?

### A hot topic on the political stage

Climate change is regarded as one of the biggest economic and political challenges of the 21<sup>st</sup> century. The debate around climate change has gained traction after the Paris conference (COP21). It was the first climate conference where both representatives from developed as well as from emerging countries agreed to combat global warming. Previous conferences in Copenhagen and Kyoto were less conclusive. The Paris Agreement aims to limit global temperature increase to 1.5 to 2 degrees Celsius by 2050 versus pre-industrial levels. Back then, 188 out of the 196 countries committed to a pledge to reduce the emission of greenhouse gases (GHG). It was agreed that countries would provide a plan of action before 2020. Despite the general enthusiasm, there is room for scepticism as countries will formulate individual action plans independently in order to combat climate change rather than overhauling international binding agreements and goals.

A year has passed since the Paris agreement. An important milestone was the November 4<sup>th</sup>, 2016 when the Paris Agreement entered into force. Meanwhile, more and more countries have ratified their policies. As of today, more than 110 parties<sup>1</sup> have ratified their policies representing about 60% of total greenhouse emissions. Amongst these parties are heavy weights such as China, India, France, Germany, United Kingdom and the United States. However, the election of Donald Trump as president of the U.S. has brought in considerable uncertainty concerning the validity of the U.S.' ratification.

This ALTIScope is the first one in a series on the broader concepts of Sustainable Investing: Carbon Investing, ESG Best-In-Class and Impact Investing. In this edition, we will provide a landscape study and zoom into the concept of carbon investing: a topic that receives considerable attention lately and one that is closely related to the topic of climate change. This ALTIScope starts with an overview of the current

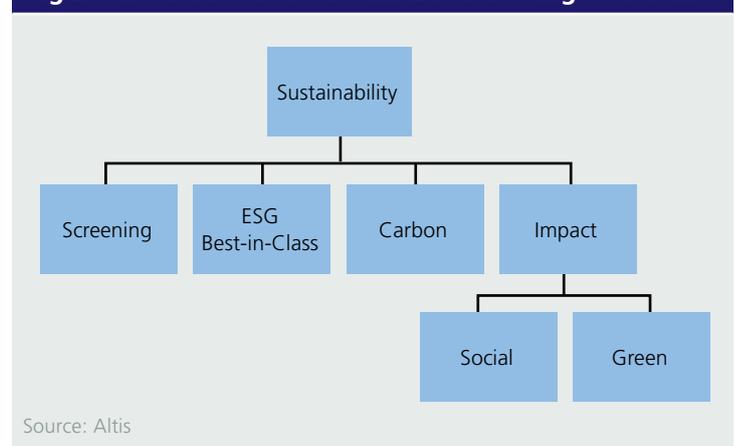
### About Altis

Altis Investment Management is a specialist in selecting and monitoring asset managers. We construct investment portfolios that cover a wide range of asset classes. These portfolios are assembled from an efficient combination of both active investment specialists and passive investment instruments. The manager selection is based on continuous qualitative and quantitative analysis, supported by a unique monitoring system that analyzes all underlying exposures of the most relevant asset managers. The selection process results in a list of recommended managers in almost all asset classes and market segments.

landscape of sustainable investing, followed by an introduction of carbon investing and a discussion on the availability and quality of carbon data. Next, we provide an overview of market solutions and how these fit into the broader concept of sustainability investing. Lastly, we end with a discussion section.

### Sustainable Investing: an overview

Figure 1: Overview of Sustainable Investing solutions

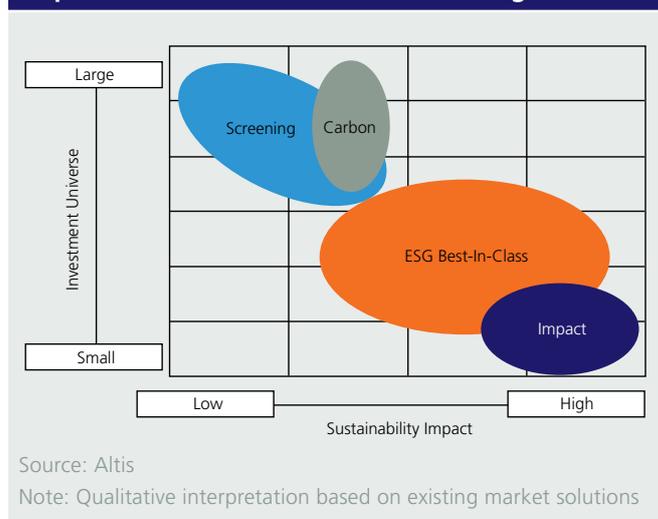


<sup>1</sup> [http://unfccc.int/paris\\_agreement/items/9444.php](http://unfccc.int/paris_agreement/items/9444.php)

The concept of sustainable investing is often regarded as the aggregation of the following broad investment solutions: (1) Screening, (2) ESG Best-in-Class, (3) Carbon and (4) Impact investing. It is important to highlight that screening, ESG best-in-class, impact and carbon investing are distinct investment solutions, with some overlap but by no means interchangeable. Actually, carbon investing is often regarded as a sub-segment of the broader ESG and green impact investing and not a substitute.

1. Screening is the most simplistic and straightforward implementation of sustainability. It is the integration of exclusion lists such as cluster munition and UN Global Compact. Exclusions are typically less than 10% of the total universe and the scope is limited to controversies and international standard norms.
2. ESG best-in-class investing is a well-established market segment with index solutions available for nearly two decades (e.g. such as S&P Dow Jones Sustainable Index and FTSE4Good Index). Best-in-class solutions aim to improve the average ESG rating based on environmental, social and governance criteria. Typically, these solutions are a passive replication of an ESG-best-in-class index, focused on the 20-50% highest ESG-rated stocks of the universe.
3. Carbon solutions only emerged a couple of years ago. Carbon is one of the inputs to the environmental factor within ESG best-in-class, though lowering the overall carbon footprint is not an explicit goal of a wider ESG best-in-class solution, it is merely a desired (positive) side-effect.
4. A further investment solution is impact investing. Although this category can also be routed back to beginning of the millennium, we observe considerable increased interest and subsequently offerings within this spectrum. Impact Investing can be sub-divided into Social and Green Impact investing. These investment solutions often align investors objectives with the 17 Sustainable Development Goals defined by the United Nations<sup>2</sup>. The focus of the impact solutions is on companies that actively contribute to a better or greener world based on certain social and environmental themes. Social impact investing focuses on themes such as health & social care, education & employment and no poverty & affordable housing. Green impact investing (often called environmental impact) focuses on climate risk factors such as energy consumption, water usage and waste generation. Typically, only companies which derive more than 50% of their revenues from any of the defined themes, are considered to have sufficient material impact. This typically corresponds to a set of investible companies which is only a fraction (<10%) of the total investible universe. In addition, the opportunity set is often skewed to small and mid-cap companies.

**Figure 2: Investment universe versus Sustainable Impact of different Sustainable Investing solutions.**



### Frontrunners investment industry

Not only governments but also corporations and investors show an increasing commitment in combating climate change and the need to transition to a greener economy. Mainly this is a result of political pressure and public opinion. In addition, there is an increasing number of corporates and institutions who acknowledge the financial and non-financial risks on one hand, and opportunities on the other hand (consortium with oil and gas giant Shell to build offshore wind farm in North Sea). One of the initiatives at corporate level is the publication of a sustainable annual report. Several of the world's largest institutional investors have also given a clear signal by signing the Portfolio Decarbonization Coalition (PDC)<sup>3</sup>. Some of Europe's leading pension funds are regarded as the driving forces behind these initiatives. Already in 2012, the Swedish pension fund AP4, co-founder of the PDC initiative, announced (in cooperation with MSCI ESG Research) to allocate about 20% of their total equity portfolio into low carbon solutions. The Norwegian sovereign wealth fund committed to divest its coal exposure, representing EUR 10 billion in assets. The two largest Dutch pension funds ABP and Zorg & Welzijn together, managing EUR 0.5 trillion in assets, have pledged to reduce carbon emission of their investment portfolios by respectively 25% and 50% by 2020. In addition to that, these Dutch giants agreed to substantially increase the allocation to green impact investing.

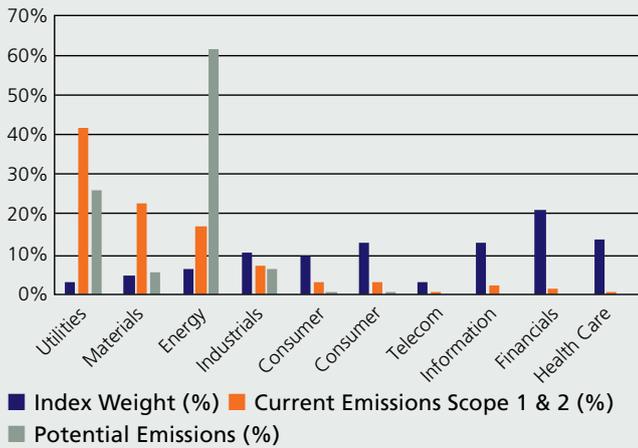
### Carbon Investing

But what is carbon investing all about? The terms carbon, CO<sub>2</sub> and GHG are often used interchangeably and essentially mean the same: the emissions from burning fossil fuel reserves. Ever since the industrial revolution our global carbon emissions have been tightly bound to economic growth. The aim of carbon investing is to reduce CO<sub>2</sub> emission. A distinction is made between current emissions and potential emissions.

<sup>2</sup> <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

<sup>3</sup> <http://unepfi.org/pdc/>

**Figure 3: Current and potential emissions of MSCI World per sector**



Source: MSCI ESG Research 2015

An illustration will help to clarify the differences in each scope, by comparing two extreme cases: automobiles industry versus utilities. Table 1 shows the percentage contribution of each scope to total current carbon emission including the source of emission.

**Table 1: Contribution of each scope to total current emissions**

	Automobiles	Utilities
<b>Scope 1</b>	5%: Manufacturer's plants	88%: Power plants' energy production
<b>Scope 2</b>	8%: Use of electricity and heat by company's buildings	1%: Use of electricity and heat by company's buildings
<b>Scope 3</b>	87%: Use of cars sold by the company	11%: Supply of fossil fuels

Source: Trucost, 2015

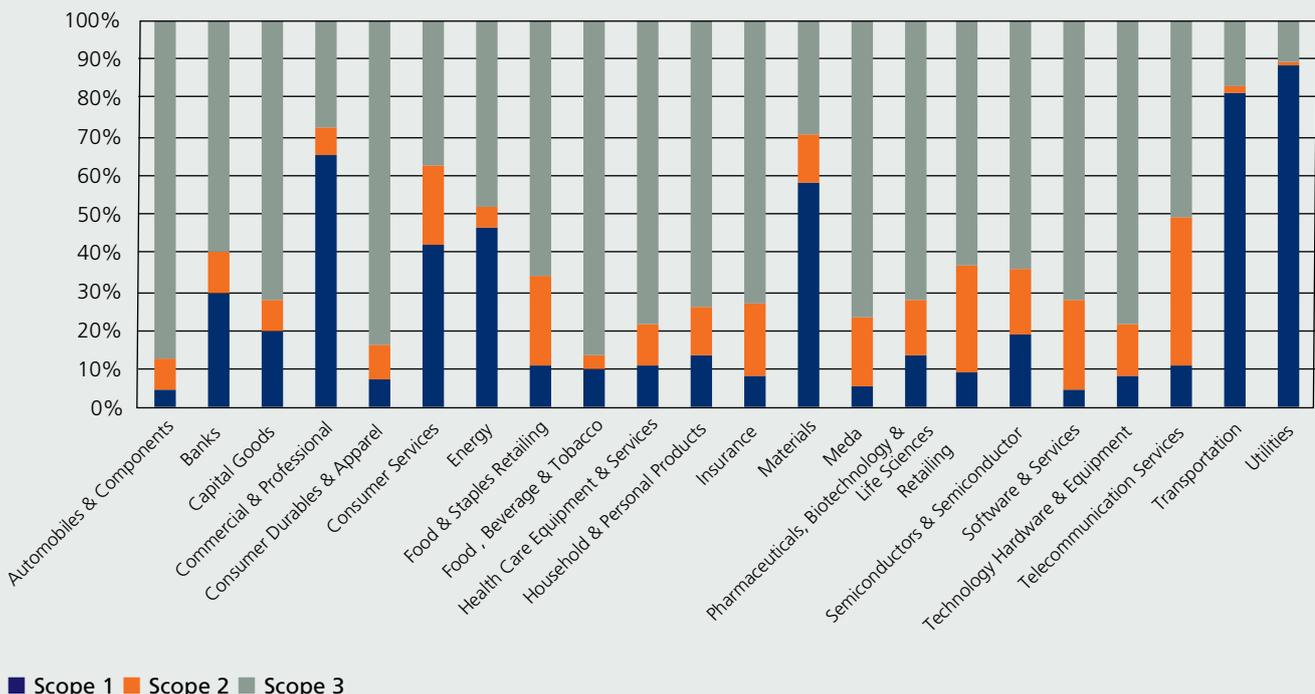
**Current emissions**

As the name already implies, current emissions are caused by the usage (i.e. burning) of fossil fuels. Not surprisingly, these emissions are concentrated in sectors with high energy intensity such as the utilities, energy and materials. Current emissions can be sub-divided into three scopes:

- Scope 1: direct emissions for producing goods or delivering services owned or controlled by the company
- Scope 2: indirect emissions associated with the generation of purchased electricity or heat consumed by the owned or controlled equipment/operations/buildings of the company
- Scope 3: all other indirect emissions both upstream and downstream of a company's operations

As shown in figure 4, the dispersion of the various scopes is significant among different industries. For most industries, scope 3 is the largest contributor of current emissions, but also the most challenging to estimate and to attribute. Take again the automobile industry as an example, is the car manufacturer "responsible" for the emissions from using a car or is the owner of the car "responsible"? In general, scope 3 is not well defined and not consistently calculated or disclosed by companies. Due to these inconsistencies and the potential of double counting (same product is part of multiple supply-chains), it is often hard to perform a meaningful comparative analysis for scope 3, although it does give some insights. Consequently, the focus of most investors is on scope 1 and 2, which can be accurately determined or estimated.

**Figure 4: Distribution of current carbon emission of MSCI ACWI**

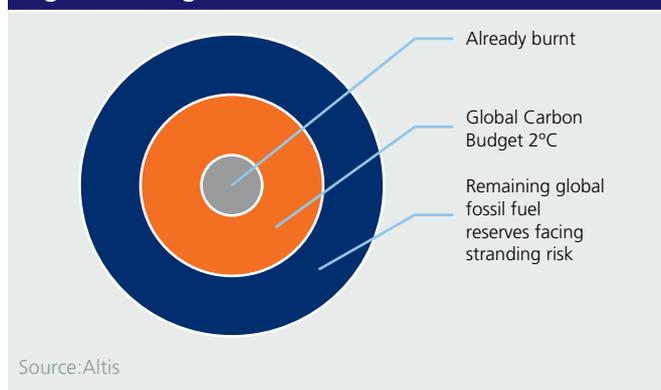


Source: Trucost 2015

## Potential emissions

Potential or future emissions are predominantly concentrated within the energy sector coming from fossil fuel reserves. From these fossil fuel reserves, coal is by far the most carbon intensive fuel type, emitting twice as much as natural gas. Apart from the concerns regarding future impact on emissions, there are also financial risks associated with fossil fuel reserves: if these are not used in the future, they become “stranded assets”. A highly debated topic between academics and practitioners is the belief that the earth cannot sustain the current level of emissions without causing structural damage to the eco-system. To meet the objective of limiting global warming to a maximum of 2 degrees Celsius by 2050, a vast majority of the discovered fossil reserves would need to remain unused. A recent study indicates that under the 2-degree Celsius scenario, 30% of oil reserves, 50% of gas and 80% of coal becomes obsolete<sup>4</sup>.

**Figure 5: Usage of fossil fuel reserves.<sup>5</sup>**



There are three counter-arguments raised to the noted stranded assets risk.

1. Business disruption is nothing new, the key for these energy companies is to re-invent themselves. They can spin-off or isolate stranded assets or focus on more sustainable businesses (like renewable energy). Something similar was done in the telecom industry, where mobile telephone providers (often daughter-businesses) were a stand-alone business entity and even acquired in some cases their (former) parent companies (incumbent fixed telecom) in a later stage.
2. In general, emerging markets prioritize on economic goals over environmental goals. These governments argue that “to feed” their people is more important than dealing with the “luxury problem” raised by developed economies. They may decide to exploit fossil fuels as much as possible until alternative energy sources are a superior substitute from a cost advantage perspective.
3. The valuation of fossil fuel reserves on corporate balance sheets have always been a function of expected output and energy price expectations. The total of fossil fuel reserves consists of reserves which can be explored relatively cheaply. The high cost reserves are already heavily discounted on balance sheets if at all present.

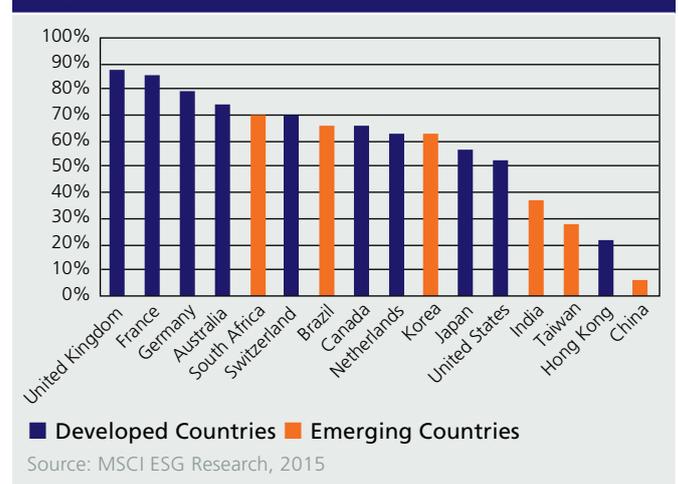
<sup>4</sup> Nature, 2015: The geographical distribution of fossil fuels unused when limiting global warming to 2°C

<sup>5</sup> Illustrative purposes only

## Reporting

The availability and quality of carbon data is the most important ingredient for carbon reporting, but also the most challenging. Carbon data can be found in a company’s investor documentation, annual report (voluntary or regulation) or provided by voluntary initiatives such as Carbon Disclosure Project (CDP)<sup>6</sup>. CDP, the world’s largest provider of voluntary data, encourages and motivates companies and cities to disclose environmental impact. It all started with an initiative where cities and companies complete a questionnaire to report and disclose carbon emissions. Over time this has been extended with reporting on other climate risks such as water, waste management and forestry. However, CDP only facilitates the collection of data and conducts no efforts in validating or cleaning of the data. Therefore, this data is often unreliable as companies reporting might overlook certain operations or report unexplained deviations from previous years. Another shortcoming with carbon reporting is the effective disclosure of companies on carbon emission. Today, only 60%<sup>7</sup> of the constituents of the MSCI All Country World Index report on carbon emissions, though this figure is growing. Creating awareness in the market will increase the disclosure ratio. The topic around carbon data is still relatively new and has only intensified within recent years. We have seen a similar trend for ESG reporting. In 2011 only 20% of the companies in the S&P 500 reported on ESG in sustainable reports. Nowadays this exceeds 80%.

**Figure 6: Percentage of companies disclosing carbon emissions**



As figure 6 shows, the percentage of disclosure is higher in developed countries compared to emerging countries. Not only is the percentage of disclosure of emerging countries lower, but quality of data is also of lesser value. This is an important observation given that some of the companies in emerging markets are the highest emitters.

Obtaining accurate and high-quality data is an important topic. There is a hand full of third-party data providers like Trucost, RobecoSAM, Sustainalytics and MSCI ESG Research which are specialized in this segment. These providers validate and

<sup>6</sup> <https://www.cdp.net/en>

<sup>7</sup> MSCI ESG Research, 2015

**Table 2: Metrics of carbon footprint**

	Total Carbon Emission	Normalized Carbon Emission	Carbon Intensity
<b>What does it measure?</b>	The total portfolio's carbon footprint	Portfolio's normalized carbon footprint per million Dollar invested	Efficiency of the portfolio in terms of carbon emission per unit of output
<b>How is it measured?<sup>8</sup></b>	ton CO <sub>2</sub> e	ton CO <sub>2</sub> e / \$ M invested	ton CO <sub>2</sub> e / \$ Sales (or another unit)
<b>What does it mean?</b>	Measures the carbon footprint of the portfolio: total CO <sub>2</sub> emission for which the equity portfolio is accountable. It is the sum of proportionate carbon emissions of the underlying companies corrected for the investor's share of ownership.	Normalized measurement of the portfolio's carbon emissions contribution, which enables comparison between benchmarks and portfolios regardless of size.	Measures the carbon efficiency of the portfolio and allows investors to measure how much carbon emission per dollar of sales (or any other unit) generated by the underlying companies. This metric adjusts for company size.

Source: MSCI ESG Research, 2015

**Table 3: Overview of index solutions for carbon investing**

	Exclusions	Exclusion & Optimization	Optimization	Pure Play
Description	<ul style="list-style-type: none"> <li>Exclude companies with high CO<sub>2</sub> emissions and/or reserves</li> <li>Rebalance based on market capitalization</li> </ul>	<ul style="list-style-type: none"> <li>Exclude companies with high CO<sub>2</sub> emissions and/or reserves</li> <li>Optimize to companies with low CO<sub>2</sub> emissions and/or reserves</li> </ul>	<ul style="list-style-type: none"> <li>No exclusions</li> <li>Optimize to companies with low CO<sub>2</sub> emissions and/or reserves</li> </ul>	<ul style="list-style-type: none"> <li>Invest directly in carbon solutions and cleaner and alternative solutions</li> </ul>
Examples	<ul style="list-style-type: none"> <li>FTSE Fossil Fuel Free</li> <li>S&amp;P Fossil Fuel Free</li> <li>MSCI Fossil Fuel Exclusion</li> </ul>	<ul style="list-style-type: none"> <li>MSCI Low Carbon Leaders</li> <li>S&amp;P Carbon Efficient Select</li> <li>S&amp;P Fossil Fuel Free Carbon Efficient</li> <li>STOXX Low Carbon Industry Leaders</li> </ul>	<ul style="list-style-type: none"> <li>MSCI Low Carbon Target</li> <li>S&amp;P Carbon Efficient</li> <li>STOXX Low Carbon</li> </ul>	<ul style="list-style-type: none"> <li>MSCI Global Climate</li> <li>FTSE Environmental Opportunities</li> <li>S&amp;P Clean Energy</li> <li>STOXX Climate Change Leaders</li> </ul>
Advantages	<ul style="list-style-type: none"> <li>Effective in lowering carbon footprint</li> <li>Simplistic</li> <li>Well defined exclusions</li> <li>Low turnover</li> </ul>	<ul style="list-style-type: none"> <li>Effective in lowering carbon footprint</li> <li>Well defined exclusions</li> <li>Lower T.E.</li> </ul>	<ul style="list-style-type: none"> <li>Effective in lowering carbon footprint</li> <li>Consistent investment universe</li> </ul>	<ul style="list-style-type: none"> <li>More progressive to take advantage of structural changes</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>Exclusions are somewhat subjective</li> <li>Structural biases</li> <li>Less risk control</li> <li>High T.E.</li> </ul>	<ul style="list-style-type: none"> <li>Exclusions are somewhat subjective</li> <li>Potential higher turnover</li> <li>Less transparent</li> </ul>	<ul style="list-style-type: none"> <li>Potential higher turnover</li> <li>Less transparent</li> <li>Large deviation in possible T.E.</li> </ul>	<ul style="list-style-type: none"> <li>High T.E.</li> <li>Limited universe</li> </ul>

Source: Altis

normalize reported data and provide estimates for companies that report falsely or do not do so at all. For the use of carbon data, a specialized party is a must to ensure full coverage and good quality of data. Publicly available data is simply insufficient. Nevertheless, this is done on a best-effort basis and different data providers will come up with different estimates. In order to compare carbon data among different sectors and companies, the data needs to be standardized. The metrics shown in table 2 are most widely used to determine a portfolio's carbon footprint. So far there is no consensus about which methodology is the default, but generally, there is a preference for the "Normalized Carbon Emission" and "Carbon Intensity" measures as they enable a good comparison between different benchmarks and portfolios.

### Market solutions

Carbon investing can be done either via a passive implementation or an active solution. More and more index solutions are offered in the market, but active carbon solutions are still limited. An emerging stream of active solutions can be found in the multi-factor space in which an overlay strategy is added to help lower the carbon footprint. Fundamental active management purely focused on carbon is almost non-existent. Active managers tend to focus more on the broader climate change concepts by also incorporating themes such as water, alternative energy and waste management. If we look at the carbon indices we can distinguish between four index solutions each with their own advantages and disadvantages. An overview is given in the table 3.

<sup>8</sup> CO<sub>2</sub>e stands for CO<sub>2</sub> emission

An investor will seek a balance between financial and non-financial risk and return objectives when considering lowering the carbon footprint of the portfolio. An important consideration is weighing carbon reduction (non-financial risk) versus tracking error (financial risk). In general, the higher the achieved carbon reduction, the higher the tracking error (T.E.) versus the generic market index at a diminishing rate. Research from MSCI<sup>9</sup> shows that an increase in T.E. beyond a certain limit results only in marginal corresponding reduction in carbon exposure. Optimized solutions have the lowest T.E. but also the least carbon reduction. On the other hand, exclusion and pure-play solutions have the highest T.E. but also achieve the highest carbon reduction. With a combined solution of exclusions and optimization, investors end up somewhere in the middle. At Altis, we believe that an optimized (with or without exclusions) approach is most prudent and the preferred solution. There is a strong emphasis on risk control resulting in lower active risk (i.e. minimal T.E. < 1.0%) at similar absolute risk (beta close to 1). Another consideration is that excluding carbon-intense sectors entirely, may be an effective way to reduce the carbon footprint of your portfolio, but it also excludes you from:

1. Encouraging companies with the best environmental policies within a particular sector, by overweighing these relatively good companies versus their polluting peers within the same sector. A best-in-every-sector approach creates competition. Outright exclusion does not.
2. Being able to engage with companies within sectors with the highest carbon emissions, and thus, where it really matters. For instance, you might be able to achieve a higher global emission reduction rate by convincing an oil company to stop exploiting oil sands, rather than convincing a bank in reducing paper printing by 10%.

## Summary and Discussion

Climate change is nowadays a hot topic in the media. Public awareness is growing and companies increasingly recognize the risks associated with climate change although carbon investing is still in its early stage. The current index solutions

aim to decrease the carbon footprint and/or reserves. However, this does not necessarily help the climate per se, as it only decreases the investor's carbon exposure and just possibly shifts responsibilities to others. Many of the heavy carbon emitters are to a large extent controlled by governments (especially emerging markets) and demand for energy consumption is still growing. Moreover, there is little focus on carbon avoidance; the potential savings on carbon emission of using more efficient services and products. The solution is more likely to be found in more efficient or alternative energy solutions. For instance, due to energy efficient technologies the emission of automobiles can potentially be reduced substantially. Moreover, carbon emission is only one risk factor within the scope of climate change. The overall energy consumption, the treatment and usage of water, and waste management are equally important. The reason why the focus is currently on carbon investing is because of the availability and quality of data. This is still inadequate for most of the other climate factors. What an investor also should aim to circumvent is to exchange one risk for another. For instance, some of the perceived low carbon emitters in the utility sector (i.e. hydropower) are causing more water pollution.

Carbon investing is a static snapshot of climate performance and is backward-looking, while ESG best-in-class and impact investing have a stronger focus on future objectives and policies and is therefore more forward-looking. A more balanced set of environmental, social and governance criteria often fits better to the sustainability objectives set by institutional investors in Europe. Maintaining a balanced portfolio with exposure to companies pursuing best-practices appeals most to us. On the one hand, you can encourage companies across all sectors to address various ESG issues, including climate change, effectively. On the other hand, your portfolio is much better diversified.

We will continue our endeavours by reviewing developments in ESG best-in-class and impact investment solutions.

<sup>9</sup> MSCI ESG Research: Beyond Divestment Using Low Carbon Indexes, 2015

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