

A vibrant, fairytale-style illustration of a castle on a lush green hill. A fairy with large, colorful wings is flying near a waterfall on the right. A unicorn and a dragon are flying in the sky above the castle. The scene is set against a blue sky with soft clouds and a starry night sky at the top.

**ONCE UPON A TIME  
THE GOOD INVESTOR SWITCHED  
TO A LOW CARBON INDEX  
THEN MANY INVESTORS FOLLOWED  
AND GOVERNMENTS ENCOURAGED THEM  
THE STOCK PRICE OF THE VILLAIN FOSSIL-FUEL COMPANIES  
DROPPED, SO THEIR COST OF CAPITAL INCREASED, SO THEY ALL  
CHANGED THEIR INVESTMENT PLANS TO ALIGN WITH A 2D PATHWAY  
OR RAN OUT OF FINANCING, STOPPED INVESTING AND FACE INCREASED COMPETITION FROM  
GREEN COMPANIES. NOW EVERYBODY LIVES HAPPY IN A DECARBONIZED ECONOMY AND UNICORNS FLY IN THE SKY**

## The Energy Transition Risk Project



The ET Risk Consortium, funded by the European Commission, is working to develop the key analytical building blocks needed for Energy Transition risk assessment and bring them to market over the coming two years.

### 1. TRANSITION SCENARIOS

The Consortium will develop and publicly release two transition risk scenarios, the first representing a ‘soft’ transition extending current and planned policies and technological trends (e.g. an IEA NPS trajectory), and the second representing an ambitious scenario that expands on the data from the IEA 450S /2DS, the project’s asset-level data work, and relevant third-party literature. The project will also explore more accelerated decarbonization scenarios.

### 2. COMPANY & FINANCIAL DATA

Oxford Smith School and 2° Investing Initiative will jointly consolidate and analyze asset level information across six energy-relevant sectors (power, automotive, steel, cement, aircraft, shipping), including an assessment of committed emissions and the ability to potentially ‘unlock’ such emissions (e.g. reducing load factors).

### 3. VALUATION AND RISK MODELS

- a) **2°C portfolio assessment** – 2° Investing Initiative. 2° Investing Initiative will seek to integrate the project results into their 2°C alignment model and portfolio tool and analytics developed as part of the SEI metrics project.
- b) **ClimateXcellence Model** – The CO-Firm. This company- and sector-level risk model comprises detailed modeling steps to assess how risk factors impact margins and capital expenditure viability at the company level, before and after company adaptation.
- c) **Valuation models** – Kepler Cheuvreux. The above impact on climate- and energy-related changes to company margins and cash flows can be used to feed discounted cash flow and other valuation models of financial analysts. Kepler Cheuvreux will pilot this application as part of their equity research.
- d) **Credit risk rating models** – S&P Global. The results of the project will be used by S&P Global / Trucost to determine if there is a material impact on a company’s creditworthiness.



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## EXECUTIVE SUMMARY

Once upon a time, in a land far, far away...

We are at a crucial point in the trajectory on sustainable finance. When central bank governors, CEOs of major banks and insurance companies, and governments all speak of sustainable finance, the mainstreaming case is largely made. Momentum is there and growing. We have the attention of decision-makers on the topic – how to align financial markets with policy objectives, specifically and perhaps in the debate most prominently the objective of limiting global warming to well below 2°C.

At 2° Investing Initiative, we have been a partner in this conversation for what in October will be 6 years. In 2012, we coined the concept of 2° investing.<sup>1</sup> In 2013, we developed the first comprehensive analysis on financial policy options.<sup>2</sup> We initiated the process that would end up as Art. 173 of the French Energy Transition Law – directly working with members of parliament in designing the concept of integrating target setting in disclosure.<sup>3</sup>

In 2015 we launched the first tool to measure the alignment of financial portfolios with climate goals across key technologies.<sup>4</sup> Since then, we have worked with the Bank of England and California Insurance Commissioner on the first 2°C scenario analysis conducted by financial supervisors, and in joining the European Commission High Level Expert Group on Sustainable Finance, helped design the European policy roadmap on sustainable finance.

We are now however at a crossroads. Cinderella fails to meet her prince.

There is a growing risk that the momentum on the topic will reach a dead end. The debate is lacking serious engagement: positive or negative effects of policy actions, unintended consequences, and the extent to which policies can truly contribute to desired outcomes (i.e. climate mitigation) should be discussed. In this context, we see a growing need for evidence-based policymaking and evidence-based actions by financial institutions.

The debate on divestment vs. engagement lacks meaningful evidence on both sides with regard to their actual impact. The same is true for the conversation around green bonds<sup>5</sup> and portfolio alignment<sup>6</sup> – something we spearheaded in the past.

With the attention on the topic, it is imperative that we graduate the conversation from momentum to impact, from theory to evidence, from fairy-tale to reality. This is particularly true for the policy agenda, which needs an evidence-based policymaking approach to deliver on the sustainable finance objectives.

In this context, we are releasing a series of reports designed to contribute to the evidence-based impact of both investor and bank actions and of policies. We recently launched a report on the Green Supporting Factor and the potential impact of green bonds. Future reports are planned on retail investing and related topics.

These documents are not marketing documents in terms of making the case for the approaches we have pioneered in the past – notably the concept of portfolio alignment. Instead, it is designed to

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<sup>1</sup> 2° Investing Initiative (2013) “Connecting the dots between climate goals, portfolio allocation and financial regulation”

<sup>2</sup> 2° Investing Initiative (2014) “Shifting private capital towards climate-friendly investments: the role of financial regulatory regimes”

<sup>3</sup> 2° Investing Initiative (2013) “Connecting the dots between climate goals, portfolio allocation and financial regulation”

<sup>4</sup> 2° Investing Initiative (2015) “Assessing the alignment of portfolios with climate goals”

<sup>5</sup> 2° Investing Initiative (2018) “Shooting for the moon in a hot air balloon?”

<sup>6</sup> 2° Scenario Analysis website by 2° Investing Initiative <[www.transitionmonitor.com](http://www.transitionmonitor.com)>

graduate the conversation across climate actions in financial markets from concepts around ‘exposure’ to ‘impact’ and to disentangle risk management from non-financial objectives.

This report focuses on the question of low-carbon indices. It responds to the planned reform by the European Commission on benchmark indices, with an aim to support them and the Technical Expert Group on Sustainable Finance in their thinking about climate-themed indices in the context of the upcoming Action Plan on Sustainable Finance. The European Commission considers this legislative agenda as contributing to facilitating “investments in sustainable projects and assets across the EU.” More specifically, it sees the regulation as a response to the “risk of ‘greenwashing’, whereby all low

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*“The European Commission is (...) unveiling its strategy for a financial system that supports the EU’s climate and sustainable development agenda. (...) The Action Plan on sustainable finance is part of the Capital Markets Union’s (CMU) efforts to connect finance with the specific needs of the European economy to the benefit of the planet and our society.”*

European Commission Press Release on the EU Action Plan on Sustainable Finance

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carbon indices are being equally promoted as environmentally relevant despite having different characteristics.”

In responding to this constraint, the regulation seeks to define ‘low-carbon’ and ‘positive carbon impact benchmarks’. The Regulation (EU) 2016/1011 is set to be amended that defines low-carbon indices as *any* index that has a lower carbon footprint than its mainstream benchmark, where this result is not an ‘accident’, and where the construction rules are consistent with delegated acts to be developed.

We conclude that the idea of ‘low-carbon benchmarks’ based on financed emissions creating environmental benefits is currently a fairy-tale; there is no evidence that this is the case. Indeed, our research suggests that sometimes low-carbon indices may even perform worse on some 2°C scenario standards than the mainstream benchmarks. For example, the MSCI ACWI Low-Carbon Index sees a higher growth in coal power than the mainstream benchmark index (see Section 4.3).

More fundamentally, the underlying theory of change needs to be challenged. In many cases, low-carbon indices yield zero transition risk benefit because they minimize the tracking error. Moreover, as passive products with limited adoption, there is no clarity on the roles these indices play in practice in terms of influencing investment decision-making – in particular since it is not this decision-making that is being evaluated in the index.

That is not to say that the planned EU regulation cannot be successful. A broader recognition that simple ‘carbon footprint’ indexes are not fit for purpose can help the development of more sophisticated index products – with a view towards the long-term. Finally, a consideration of the performance of indexes relative to 2°C climate goals will reflect the recommendations of the Financial Stability Board Task Force on Climate-Related Financial Disclosures with regard to 2°C scenario analysis and ensure the alignment with the EU policy goals.

The above-described flaws clearly call for an alternative to using ‘low carbon’ indices as they are calculated today. So, in this context, which measures could the European Commission take concerning this topic? The following summarizes the current text of the EU regulation in its Annex of the suggested regulation regarding the type of criteria that should be reported by benchmark / index providers and challenges as well as potential alternatives.

Methodology for low-carbon benchmarks

Current EU Regulation framing	Potential alternatives
(a) “...the list of underlying assets that are used for calculating the low-carbon benchmark”	<p>A list of assets helps identify companies, but as a pure list may not be meaningful, nor easily processed for users. To the extent compatible with the business model, more detailed deviation of asset weights relative to parent benchmarks (should they have been applied) may be meaningful to determine the effect of the selection and weighting factors on the outcome.</p> <p><b>The information content suggested herein could be enhanced.</b></p>
(d) the criteria for and the methods of how the low carbon benchmark measures the carbon footprint and carbon savings associated with the underlying assets in the index portfolio	<p>These criteria are limited exclusively to carbon. As evidence, a significant share of indexes use alternative criteria (e.g. scoring).</p> <p><b>The criteria and methods of measurement should not be specific to carbon but relate to the actual indicators mobilized in the index.</b></p>
(h) the type and source of input data used for the selection of assets or companies eligible for the low carbon benchmark, including: (i) emissions from sources that are controlled by the company...	<p>As highlighted above, emissions data is not a meaningful data point for low-carbon benchmarks, unless they reflect a comprehensive scope in terms of the numerator (e.g. Scope 3) and in the denominator are linked to the underlying economic activity.</p> <p><b>Emissions data should be explicitly linked to the volume of products and services by type (e.g. ton of cement, MWh) that are associated with the emissions levels.</b></p>
(i) “the criteria for and the methods of how the low carbon benchmark measures the carbon footprint”	<p>Financed emissions indicators are not a meaningful metric to compare the relative climate performance of companies or portfolios.</p> <p><b>These criteria should not be required as reporting as it will suggest to users that this indicator is a meaningful way to compare indexes. It is not.</b></p>

Methodology for positive carbon impact benchmarks

Current EU Regulation framing	Suggested alternatives
<p>The administrator of a positive carbon impact benchmark, in addition to the obligations applicable to the administrator of a low carbon benchmark, shall disclose the positive carbon impact of each underlying asset included in the benchmark and shall specify the formula or calculation that is used to determine whether the emission savings exceed the investment asset's or company's carbon footprint ('positive carbon impact ratio').</p>	<p>The data quality and inconsistency of approaches related to avoided emissions – described above – suggest that here too, positive carbon impact ratios should be not be reported so as to avoid being misleading.</p> <p><b>Specifically, indexes seeking to increase exposure to positive opportunities should document their share of exposure to assets aligned with the EU Taxonomy Framework under development or related ‘green’ indicators – including a potential reference, where possible, to EU benchmarks (see description below).</b></p>

In addition, adjusting the existing criteria, the following criteria should be considered:

- **Data uncertainty and estimation.** Representations of the data uncertainty associated with the data points used to calculate the index, including the number of data points that were estimated as a percentage of the total data points mobilized, as well as the estimated uncertainty of the estimates at individual data point level. Estimation approaches should also be identified and revealed. For example, an index that advertises 20% lower carbon footprint with a 30% estimation uncertainty may raise some concerns for market actors.
- **Share of total portfolio emissions.** When using emissions or alternative data (e.g. asset-level data) that is based on incomplete data (e.g. excluding Scope 3, limited to certain sectors), the index / benchmark should provide information as to the percent of emissions against which the low-carbon benchmark is being optimized. For example, a number of low-carbon benchmarks advertise reductions in the carbon footprint by 50% or more. Given that this is limited to Scope 1 and 2 however, even leaving data uncertainties aside, in terms of a holistic carbon footprint including banks Scope 3, this carbon footprint reduction may be closer to 20% or less.
- **Performance relative to EU-policy defined benchmarks.** Low carbon index performance should specifically and explicitly report on indicators that relate to the EU policy-defined benchmarks. This could in the first instance relate to EU or international scenario policy roadmaps related to the 2°C objective across key sectors (e.g. fuel mix in the power sector, powertrain shares in the auto sector, emissions intensities across industrial sectors). Such a dashboard could be created by the Technical Expert Group and build on existing benchmarks developed by EU-funded research programmes (e.g. SEI metrics). As publicly available benchmarks, they can be used across data providers and consultants without creating a commercial monopoly.
- **Address mis-selling.** Index factsheets are frequently advertised as ‘reducing transition risk’ or ‘having an impact’. The regulation should specifically address the marketing of these benchmarks in order to avoid ‘risk-washing’ or ‘greenwashing’ with regard to the underlying role of these indexes and the indirect and uncertain (and indeed potentially non-existent) impact of these products on the real economy.

**Supporting the development of an EU-policy aligned benchmark.** Assuming the methodological framework and data are available, the design and calculation of an index is simple and relatively cheap (about 50 to 150k€, or even less in some cases). An index provider, an asset manager, or even any organisation can initiate its creation (if its purpose is primarily to track the performance of a list of companies - vs. investing in them). The European Commission is already providing financing through various programs (H2020, Life, Climate KIC) that can lead to the creation of climate-themed indices.

The main obstacle is to ensure the mainstream adoption of an index by institutional investors, either as a performance benchmark (reference to track the relative performance of active funds) or as an investment vehicle (passive funds based on the index. In this context, the European Commission definition of criteria for EU-policy aligned benchmark can help restate the ‘market benchmark’ concept, consistent with a broadly-diversified, EU / Paris Agreement-aligned benchmark, rather than a ‘tweaked’ market benchmark.

## SECTION 1: HOW DO BENCHMARKS RELATE TO EC POLICY GOALS?

Low-carbon or climate-themed indices are marketed as contributing to two objectives:

- Reducing investors' transition risk exposure
- Creating a positive environmental effect

**Reducing transition risk.** Low-carbon or climate-themed indices are specifically marketed as reducing or addressing transition risk. The fairy-tale logic is that by reducing exposure to companies with a higher carbon intensity, this can help reduce exposure to risks that may materialize in the context of the transition to a low-carbon economy (“transition risks”). This story can be found in the marketing material for all major index providers offering these types of products; they deviate from the market benchmark by treating ‘carbon’ as a factor or proxy that represents mispriced transition risks.<sup>7</sup>

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*“The MSCI Low Carbon Indexes are intended to help identify potential risks associated with the transition to a low-carbon economy.”*

MSCI

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*Why is this a fairy-tale?* A significant share of low-carbon indices actually have a ‘tracking error’ constraint as part of their calculation rule that prevents them from deviating from the market benchmark by more than a certain number of basis points. In the case of the MSCI ACWI Low Carbon Leaders Index for example – just choosing one example across indexes that deploy this approach - this tracking error is 30 basis points (0.3%)<sup>8</sup>. This implies that should a climate ‘Minsky moment’ occur i.e. a transition risk shock, the index calculation rules would require a reweighting that would reduce the tracking error again to within the allowed bounds. Tracking error minimization thus does not protect investors from such fundamental shocks.

It is thus almost impossible way for the index to capture significant upside or hedge significant downside. Of course, the concept of transition risk may be illusory, and markets may already correctly price these risks. In this case however, the point of investing in such products becomes moot; at best, there is a promise of marginal outperformance.

Even if we assume that this tracking error constraint does not exist, this would still not justify the use of ‘low-carbon indices’. As this paper will show, there is a significant body of evidence, quantitative and qualitative, that suggests the ‘carbon footprint’ is not a proxy for transition risk. In other words, even if you eliminate the tracking error constraint, ‘low-carbon indices’ are still problematic because they optimize risk using the wrong metrics. Moreover, carbon footprint data is poorly estimated (around 50% of emissions datapoints for listed companies are estimated given reporting gaps in CDP and related frameworks, depending on market and geography), incomplete (for most sectors, emissions data is missing the primary emissions driver- namely product use), backward-looking, and does not capture the transition risk profile, as the subsequent pages will show. Even when deploying ‘hybrid’ strategies, other metrics frequently introduce their own set of biases. Moreover, given the

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<sup>7</sup> Thomä, J.; Chenet, H. (2016) “Transition risks and market failure”

<sup>8</sup> MSCI Global Low Carbon Target Indexes Methodology

<[https://www.msci.com/eqb/methodology/meth\\_docs/MSCI\\_Low\\_Carbon\\_Target\\_Indexes\\_Methodology.pdf](https://www.msci.com/eqb/methodology/meth_docs/MSCI_Low_Carbon_Target_Indexes_Methodology.pdf)>

focus of the European Commission in the benchmark work on ‘low-carbon’, there is an implicit constraint on carbon footprint data.

Other data points, such as avoided emissions or fossil fuel reserves do little better. Avoided emissions estimates largely replicate the flaws of the carbon footprint. For example, the French consultancy Carbon4 methodology on avoided emissions uses an approach where a utility is ‘rewarded’ avoided emissions as a function of the difference between their emissions profile and the global average. Thus, a French utility exhibits significant ‘avoided emissions’ as a function of having a lower emissions profile than the global average – including utilities in emerging markets. For the cement sector on the other hand, avoided emissions are simply calculated as a function of historical absolute emissions reductions – without controlling for changes in production volume that may be due to macroeconomic effects.

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*“[Benchmark regulation on low-carbon indices will] quickly redirect financing into assets and projects with sustainable goals that have a positive impact in terms of greenhouse gas emissions and contribute to the objectives of the Paris Climate Agreement”*

European Commission

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By disconnecting the indicator from economic activity, it becomes impossible to benchmark and compare companies. Naturally, in some absolute sense, carbon footprint helps identify sectors that emit more emissions than others, exposing them more to transition risks. However, in indices, they are in almost all cases used to discriminate companies, not sectors, where this identification is no longer possible.

**Create environmental benefits.** The second fairy-tale related to low-carbon indices is that they generate environmental benefits. In its recommendations on benchmark indices, the European Commission suggests that the use of low-carbon or climate-themed indices will “quickly redirect financing into assets and projects with sustainable goals that have a positive impact in terms of greenhouse gas emissions and contribute to the objectives of the Paris Climate Agreement”.<sup>9</sup> Similar advertisement exists from asset owners communicating their ‘contribution’ to climate goals.

*Why is this a fairy-tale?* Equity markets – where almost all of the low-carbon indices are currently operating – are not a primary source of financing for companies – as highlighted by research from the IEA<sup>10</sup> and 2° Investing Initiative, and are therefore not the place where ‘financing’ is redirected.<sup>11</sup> In bond markets, climate themed indices are largely ‘green bond indices’,<sup>12</sup> which relate to refinancing rather than financing. Moreover, analysis for green bond issuers in the power sector suggests that they are not ‘greener’ than the market.<sup>13</sup> The International Energy Agency has shown the marginal role that equity markets play as a source of financing for key high-carbon sectors.<sup>14</sup>

Even if equity markets were in fact a source of financing, buying and selling shares would not directly affect the investments in the economy. The signal is indirect and hard to read – in particular when it

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<sup>9</sup> European Commission’s [Proposal for amending regulation \(EU\) 2016/1011](#) on low carbon benchmarks and positive carbon impact benchmarks

<sup>10</sup> IEA World Energy Investment Outlook (WEIO) 2014

<sup>11</sup> 2° Investing Initiative (2017) “Yellow brick road”

<sup>12</sup> A notable exception is the Solactive Low-Carbon bond index.

<sup>13</sup> 2° Investing Initiative (2018) “Shooting for the moon in a hot air balloon?”

<sup>14</sup> IEA World Energy Investment Outlook (WEIO) 2014

is blurred by the underlying data being used, and in some sense not seen at all when it is not linked to engagement with the companies.

That is not to say that equity markets cannot be an arrow in the quiver of an impact toolbox. However, the actions related to the buying and selling of shares need to be documented and linked to the impact they are desired to have. As this paper will show, frequently, low-carbon indices are in effect sending the wrong signal to companies regarding their climate impacts.

**From fairytale to reality.** The question of low-carbon indices is now on the regulatory agenda. It is increasingly seen as an opportunity to break the stranglehold of traditional mainstream benchmark indices. As highlighted by 2° Investing Initiative, these indices may exhibit a bias in favour of the ‘old economy’ – and by extension the high-carbon economy<sup>15</sup>. However, there is a risk that advancing the agenda of low-carbon indices without addressing the underlying objective – minimizing risk and/or contributing to the Paris Agreement – will lead to a dead end. This paper concludes by recommending a series of actions that will allow the princess to save the prince – upgrading climate metrics, linking indices to actions and impacts (notably assessing and using engagement as a complementary tool, an indicator starting to be assessed by providers like Climetrics), and shifting the debate to introducing ‘long-term indices’.<sup>16</sup>

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<sup>15</sup>Thomä, J.; Dupré, S.; Gorius, A. & M. Coeslier (2015) “Optimal Diversification and the Energy Transition”

<sup>16</sup> Welcome to the 21<sup>st</sup> century!

## 1) THE LANDSCAPE OF CLIMATE-RELATED INDEXES

Over the past decade, asset managers and index providers have designed a number of climate-related stock indices and funds. The following types of data points are currently deployed in indices:

- **Climate / ESG scoring.** Primarily relying on annual sustainability reports by companies, ESG analysts evaluate the companies of the investment universe on their overall approach to climate (strategy, management, performance). The index is then built based on the scores in order to select or overweight the 'best in class', usually within each industry group (e.g. energy, utilities). One example for this approach is the S&P Dow Jones Sustainability Index.
- **Carbon intensity.** With the rise of corporate carbon accounting<sup>17</sup> in the 2000s and the development of models to estimate the emissions of non-reporters,<sup>18</sup> it became possible to rank companies and re-weight portfolios based on the 'carbon intensity' of issuers, usually defined as the CO<sub>2</sub>/sales or market capitalization. This new approach led to the creation of so-called 'low carbon indices'. One example for this approach is the MSCI Low Carbon Leaders Index.
- **Green / thematic.** Another approach is the creation of so-called 'thematic' indices that seek to over-weight a certain sector or type of security in order to capture the expected upside from these sectors. These can either be simple over-weighting of companies with a high share of 'green' revenues for example or pure-play indices. From a climate perspective, these indices generally rely on 'green' data (e.g. green revenues) to identify environmental leaders. One example for this type of index is the MSCI Environmental Index series.
- **Scenario analysis.** A fourth approach has emerged more recently. Thanks to the use of forward-looking physical asset level data in key energy-related sectors,<sup>19</sup> it has become possible to compare the deployment of low-carbon technologies by companies with what they are supposed to do in 2°C scenarios (such as the ones from the International Energy Agency).<sup>20</sup> Other scenario analysis approaches (e.g. target-setting at company level) are also being developed. This approach became popular after COP21, and the recommendations of the Task Force on Climate-related Financial Disclosures to conduct scenario analysis. Through screening or weighting, this approach allows the creation of '2°C indices' that mimic what a portfolio would look like in a 2°C scenario. There are currently no indices in the market that directly deploy this approach.
- **Value at risk analysis.** Also building on scenario analysis, financial analysts have started estimating the impact of an accelerated energy transition scenario on the valuation of listed companies<sup>21</sup>, introducing alternative valuation or value at risk estimates. These approaches can be used as criteria for re-weighting and screening portfolios. Of course, this is an exclusively risk-based approach. One example for this type of index is the S&P Carbon Price Risk Adjusted Index series.

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<sup>17</sup> See the [CDP database](#) that collects carbon disclosure from listed companies.

<sup>18</sup> For a description of these models and their accuracy, see 2° Investing Initiative (2013) "[From financed emissions to long term investing metrics](#)".

<sup>19</sup> In key energy-related sectors (power, oil & gas, coal mining, automotive, aviation, shipping, cement, steel, real estate) that represent 90% of carbon emissions, business intelligence data providers developed databases on all physical assets and production plans globally (e.g. all the power plants, oil fields, etc.). For the example of power, the information available includes location, capacity and planned capacity additions. The future GHG emissions can then be estimated.

<sup>20</sup> See the EC funded project '[Developing Sustainable Energy Investment metrics, benchmarks and assessment tools for the financial sector](#)'.

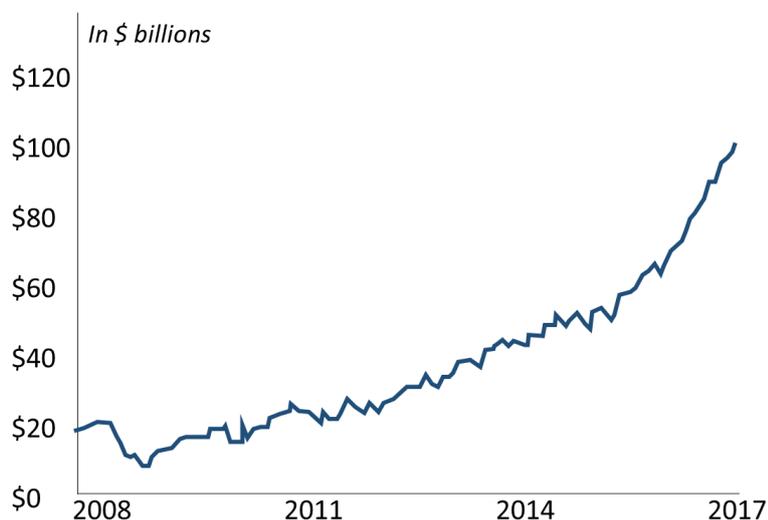
<sup>21</sup> See the EC funded project '[Energy Transition Risks & Opportunities](#)'

In terms of approaches, these different data points are sometimes used in isolation and sometimes in conjunction, as well as being complemented with ‘sector exclusion’ approaches that filter sectors in the context of applying these indicators. While not technically using ‘climate data’, sector exclusion represents the original approach in the field of ‘responsible investment’. With the rise of the climate debate, this approach has been applied to fossil fuels, with the development of ‘fossil free’ indices and funds, which in most cases in practice are limited to excluding upstream fossil fuels (i.e. excluding downstream use of fossil fuels in the power and transport sector for example). One example of this approach is the MSCI World ex-fossil fuel index.

There is limited information for assets under management actually invested in these indices. However, the broader analysis of ‘sustainability’ indices conducted by Morningstar suggests that the numbers are relatively low. Morningstar conducted a market study on passive sustainability funds, defined as “those index funds and exchange-traded products that incorporate ESG factors into their investment strategies, pursue a sustainability-related theme, or otherwise seek measurable sustainable impact alongside financial return”.<sup>22</sup>

According to Morningstar, “as of December 2017, there were 267 index-tracking sustainable funds, with collective assets under management of approximately \$102 billion worldwide. This figure has increased threefold over five years” (see Figure 1, below). Nevertheless, it still represents a fraction of global assets under management. To put this number into context, the global equity market is roughly \$70-\$80 trillion. The passive ‘sustainable’ fund market is thus smaller for example than the labelled green bonds market and the estimated ‘green’ share of revenues (3-4%)<sup>23</sup>. It is also a far cry from the responsible investment statistics popularly identified in the literature.

Figure 1 Passive ‘sustainable’ funds according to Morningstar 2008-2017 (Source. Authors, based on Morningstar 2018)



According to Morningstar, “MSCI is the clear leader in the sustainable indexing space with 55% of all global assets invested in passive sustainable funds tracking an MSCI benchmark. MSCI’s dominance is

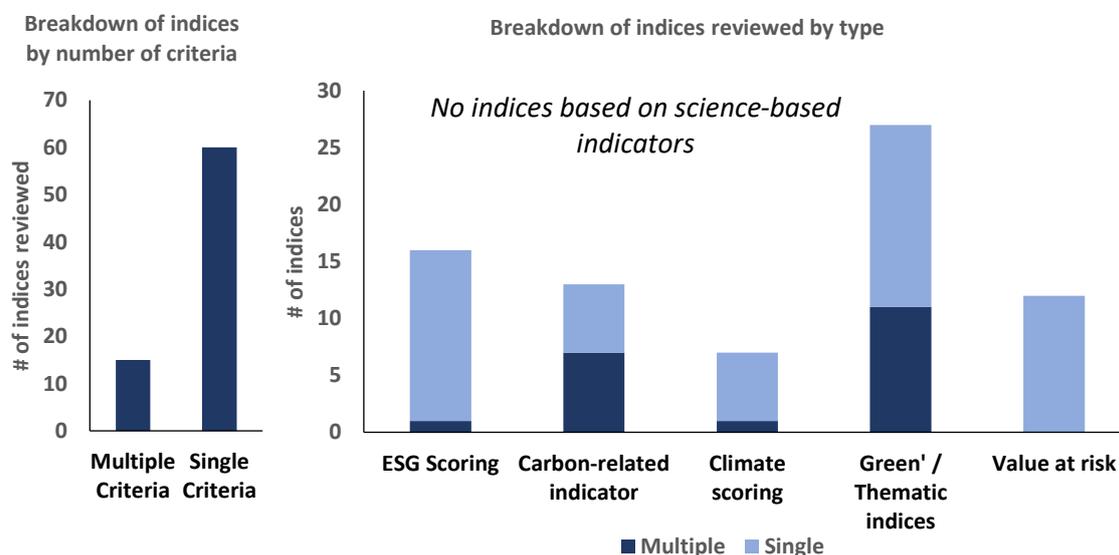
<sup>22</sup> Morningstar (2018) “Passive Sustainable Funds: The Global Landscape”

<sup>23</sup> European Commission (2017) “Shifting Private Finance Towards Climate-Friendly Investment”

helped by the fact that it is also the world’s largest ESG research provider”. FTSE Russell is the second-most popular index brand backing passive sustainable funds.

As part of this report, the authors reviewed 75 climate-related indices, across the largest index providers in the market (MSCI, S&P, FTSE Russell, Solactive, Euronext)<sup>24</sup>. Out of these indices, roughly four-fifths (80%) are so-called ‘single indicator’ indices i.e. they only optimize against a single climate indicator. Among indices reviewed, the two most common indices were so-called ‘green’ indices with a thematic approach and scoring indices. Carbon-related indices constituted the second-largest category among ‘single indicator’ indices.

The review demonstrates that currently no indices in the market are science-based concerning their ability to demonstrate alignment with Paris Agreement-aligned climate scenarios. Of course, that is not to say that thematic indices may not be considered fully aligned given their emphasis on green technology solutions. However, this explicit component was not identified in the index review. Moreover, currently no indices use specific ‘value at risk’ considerations.



## 2) THE USE CASE FOR CLIMATE-RELATED INDEXES

Investment in climate-themed index funds is often presented as a way to support the transition to a low carbon economy. However, the impact of such investments in the real economy is likely to be insignificant. The primary purpose of a climate-themed index is therefore to get exposed to companies that are likely to be the winners in an accelerated energy transition scenario or to reduce exposures to those who would not benefit from such a scenario (related to managing financial risk).

The following summarizes the various use cases identified in the context of climate-related indexes

- 1) Climate-related index funds as a ‘climate action’.** Although it is very often presented this way by investors, investing in a climate-themed fund is not a ‘climate action’ per se. In other words, the action of investing in such a fund does not lead to any carbon emission reductions in the

<sup>24</sup> As part of this analysis, the following index providers were considered: Solactive (8), MSCI (12), S&P Dow Jones Indices (1), FTSE Russell (16), Euronext (9). Note, the review was not necessarily 100% comprehensive and excluded ‘identical’ index approaches that differed solely in the universe to where they were applied.

real economy *per se*. Such an investment, under very specific circumstances,<sup>25</sup> could in theory influence stock prices, and therefore the cost of capital for issuers, thus incentivizing them to invest in a greener way. Of course, this assumes a feedback loop, which may not exist in cases where companies are taking private. However, in practice, these conditions are far from being met today, (given the volume invested and the criteria by which companies are being filtered, as well as the broader liquidity in markets) and very unlikely to be met in the foreseeable future. As will be highlighted later, even if volume achieves these impacts, currently metrics used for these indexes do not necessarily incentivize the ‘green’ companies. There is no evidence identified to show any significant increase in the cost of capital for high-carbon companies in recent years. For listed equity investors committed to supporting the implementation of the Paris Agreement, climate-themed indices are therefore not a relevant tool for ‘climate action’. Increasingly these investors choose to take part in shareholder action campaigns, requesting that investee companies set climate targets and align their investment plans with 2°C pathways.<sup>26</sup> As will be highlighted later, these approaches could be combined with indexes, adjusting the understanding of the distinction between ‘passive’ and ‘active’ investors.

- 2) **Climate-aligned indexes for tracking the performance of a greener economy.** The primary function of climate-themed indices is to track and compare the performance of a sub-set of the market with the market as a whole. Assuming the selection criteria are relevant, such an approach can help to highlight the business case for aligning corporate strategies and the economy with climate goals. In such a case, it is mostly a communication tool for climate policymakers and investors with green investment strategies, but not necessarily an index that is invested in. Some thematic indices are a case in point in this regard. Of course, communications by itself cannot be helpful, but does not constitute a climate action.
- 3) **Climate-aligned indexes for managing climate-related risks.** The main function of a climate-themed index is to enable investors to ‘bet’ on a rapid energy transition. By increasing the weight of ‘winners’ and reducing the weight of ‘losers’ in 2°C scenario, the index allows investors who believe climate-related risks and opportunities are currently mispriced by the market to ‘correct’ this perceived bias. Such an approach is only possible if the climate-related metrics used to calculate the index are relevant from a risk perspective, which as discussed below is not the case for most so-called ‘low-carbon’ indices available on the market today. Moreover, many of these indices frequently deploy a tracking-error constraint, which prevents them from deviating more than a few basis points from the benchmark against which

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<sup>25</sup> This is achieved if a critical mass of investors should act the same way, the liquidity of the market should be limited in order to avoid that investors not interested in climate seize the opportunity of underpriced assets, thus offsetting the action of climate-focused investors.

<sup>26</sup> See for instance the [Climate Action 100+](#) campaign, launched at the One Planet Summit in Paris in 2017 by 250 investors.

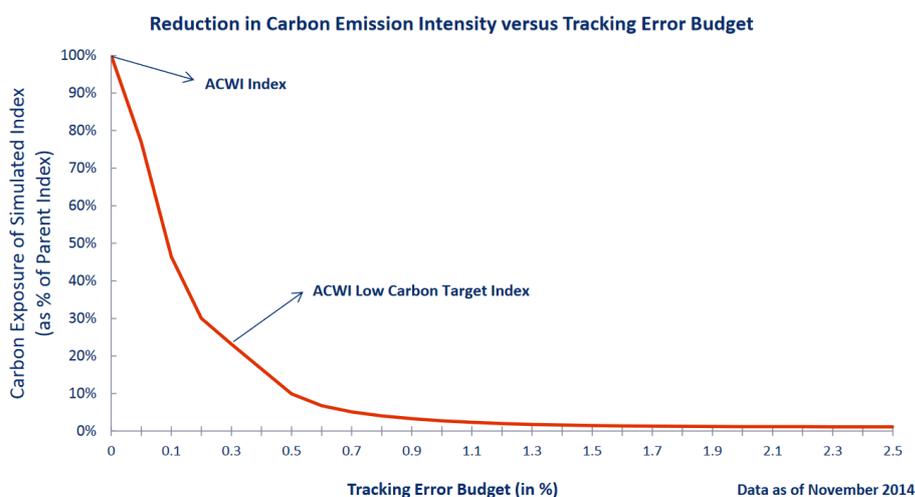
they are being compared. Thus, should the mainstream index lose significant value relative to the low-carbon index, it would have to be re-calibrated to constrain the deviation, thus ‘buying into the loss’ (see “Box: The Tracking Error Conundrum” below).

**Box: The Tracking Error Conundrum.**

A growing number of indices are advertised as having a ‘low tracking error’. Indeed, it has been demonstrated that significant reductions in carbon emissions intensity (as measured traditionally by carbon data providers) could be achieved while minimizing the tracking error. Arguably the most prominent piece of research in this field was published by MSCI in the IRC Journal (2015) in the context of the launch of their low-carbon leaders and target indices. This research suggests that low-carbon exposure cannot be obtained without additional risk.

The figure below highlights the findings of the research of MSCI (as of November 2014). At face value, the analysis is clearly correct and consistent with further recent analysis by the Grantham Research Institute suggesting that divesting from one sector in the S&P 500 would not have materially changed performance since the index’s inception. The implication is that low-carbon strategies are possible without additional risk.

There are a couple of challenges with this narrative, however. First, the strategies are unlikely to represent a fundamental capital shift – required to meet the Paris Agreement – muting the potential economic impact that such a shift may seek to eventuate. Moreover, a key driver of the logic of these ‘tracking error’ minimization approaches is the concept of ‘transition risk’. There is thus a logical fallacy in the low-carbon index approach. Either, transition risks are not material. In this case, a risk-based approach is not relevant and thus the additional costs of running a climate-related index are not offset by the benefits – low-carbon indexes represent some limited upside in terms of potential outperformance, but this upside – and hedge against downside – is by design limited. Or, the risks are material and cross-cutting, in which case, an index that minimizes tracking error to a mainstream benchmark would be systematically unable to avoid these risks – and capitalize on the opportunities.



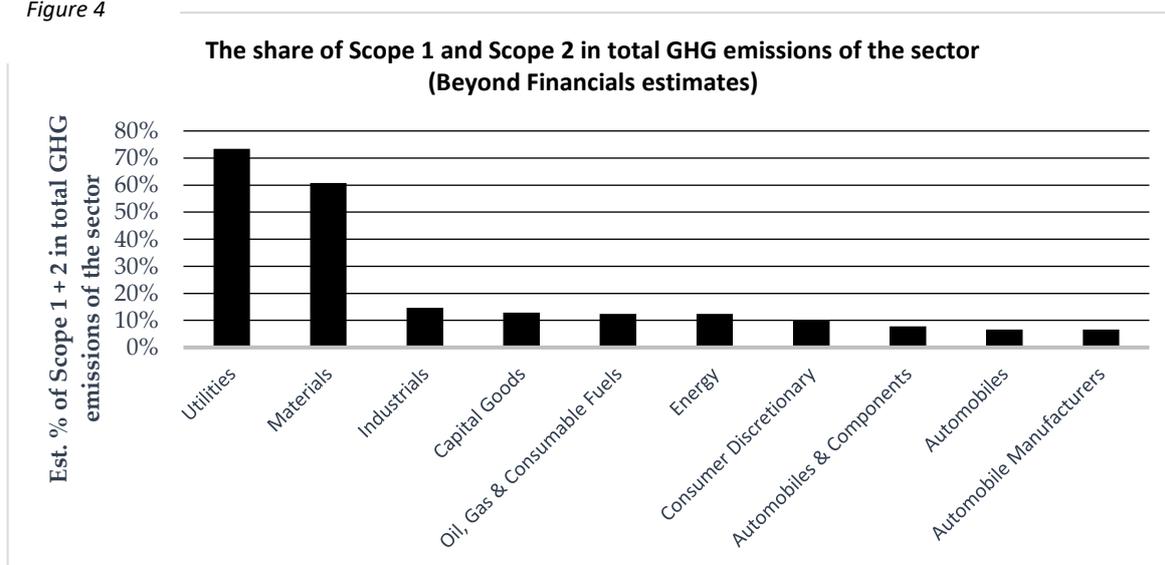
#### 4) THE FLAWS OF CARBON AS A WAY TO COMPARE INDEXES

This section focuses on the case of ‘low-carbon indexes built on carbon intensity metrics, where the carbon footprint is normalized by a financial indicator (e.g. sales, market capitalization). It concludes that they are not relevant for the use case identified in the previous section. The focus is governed by the emphasis in the EU regulation on this type of indicator. In order to provide examples for the arguments the MSCI ACWI Low Carbon Leaders ETF by Blackrock iShares was compared to the MSCI ACWI ETF by Blackrock iShares were compared to each other. Similar results would have been identified using other carbon data, and the use of MSCI indexes is not a comment on their inferiority / superiority relative to others. It should also be noted that the analysis may be biased as a function of deviations of the ETF of the index – in the case of both ETFs the overlap with the parent index is around 90%.

**Financed emissions – The wrong numerator.** With low-carbon indices, carbon emissions are used as a proxy for identifying activities that will lose if the energy transition accelerates. However, this proxy is not relevant for five main reasons:

- **‘Scope 3’ ignored.** Most low carbon indices rely on corporate reporting, which only covers Scope 1 (direct emissions) and Scope 2 (purchased electricity). These scopes are relevant for certain sectors such as power production, but in most sectors, the most relevant emissions from a risk perspective (‘Scope 3’ emissions - related to the use of products and supply chains) are missing (see Figure 4, below). Some index providers attempted to fix this problem by adding the Scope 3 emissions for selected sectors where raw data exist (usually the carbon content of fossil fuel reserves owned by energy companies). However, this ‘cherry-picking’ approach amplifies the problem, rather than solving it. It will for instance put a lot of emphasis on oil majors that own reserves, while attributing no emissions to pipeline operators and SUV manufacturers that are actually more exposed from a risk perspective. Where Scope 3 is mobilized (e.g. EDHEC Low-carbon indexes), they are used as a sector filter and not for company selection.

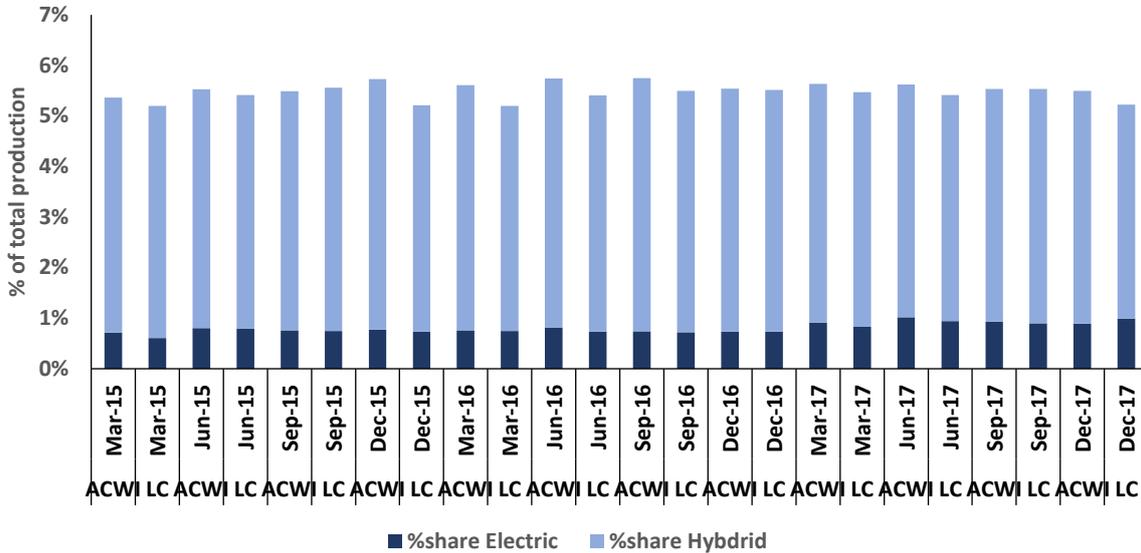
Figure 4



- **Green and neutral activities are treated equally.** The carbon intensity can only be used to identify losers, not winners. Green activities such as the production of renewables have the same low-carbon emission profile as ‘neutral’ activities such as media and services. Even in sectors like power, in which direct emissions are relevant, low-carbon activities include

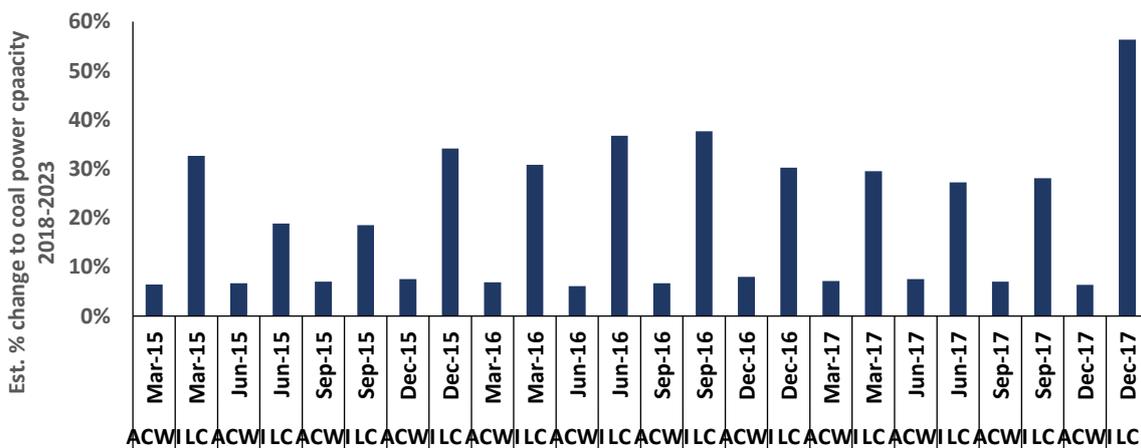
renewables but also distribution, trading, etc. As a result, many key value creation drivers, such as the production of Electric Vehicles<sup>27</sup> are ignored in low carbon indices (see Fig 5, below). The figure shows that MSCI’s ACWI (mainstream global equity index) and ACWI ‘low-carbon’ index (‘LC’ in the figure) essentially have almost identical exposures in terms of the share of hybrid and electric vehicles in total production by car manufactures in 2022.

Figure 5 % of Hybrid and Electric Vehicles in Total Production



- Past carbon performance is not a good indicator of future trends.** Carbon emission data used in most low carbon indexes are backward-looking, and thus do not necessarily lead to selecting the companies that are transitioning. Figure 6 below shows that companies in the ACWI Low Carbon Leaders Index were estimated to actually increase coal-fired power capacity by around 50% versus less than 10% for the ACWI mainstream index.

Figure 6 % Change to Coal Power Capacity



<sup>27</sup> The back testing of 2° aligned portfolios shows that the bigger drivers of value creation are the over-exposure to a few green technologies - primarily electric vehicle production and renewable power. See 2° Investing Initiative (2015) “Assessing the Alignment of Portfolios with Climate Goals”.

- Carbon as a proxy for risk.** Carbon emissions are not necessarily a good proxy to assess the exposure of a company to carbon-related financial risks. Indeed, these risks are driven by many factors, not only carbon emissions. For instance, many constraints on carbon emissions are local/national (e.g. new policies, new standards), so emissions in certain countries are associated with a financial risk while others are not. More critically, the ability of the company to respond and mitigate the risk (e.g. by passing the cost onto their clients, adapting, etc.) is not reflected in its carbon intensity. Thus, there is limited correlation between the sector risk level identified for example by Moody's and the sectoral carbon intensity (see Figure 7, below).

**Fig 7 – Lack of Correlation between Carbon Intensity and the Materiality of Climate and Environmental Risks for Credit Worthiness at Sector Level according to Moody's<sup>28</sup>**

Risk Level	Sector carbon intensity (High, medium, low)
Immediate Elevated	Independent Power Producers, Coal & Consumable Fuels
Emerging Elevated	Steel, Aluminum, Oil & Gas E&P, Construction Materials, Diversified Metals & Mining, Auto Manufacturers
Emerging Moderate	Regulated Utilities, Airlines, Integrated Oil & Gas, Paper, Oil & Gas services, Auto Parts, Gas Utilities
Low	Marine, Diversified Chemicals, Industrial Gases, Marine Ports

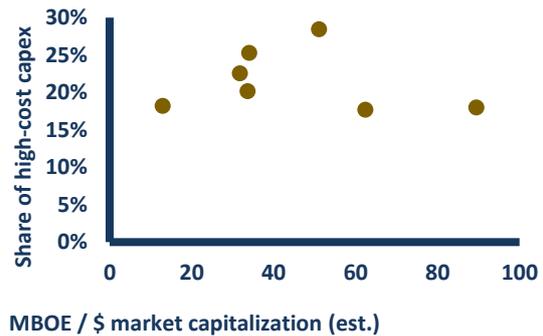
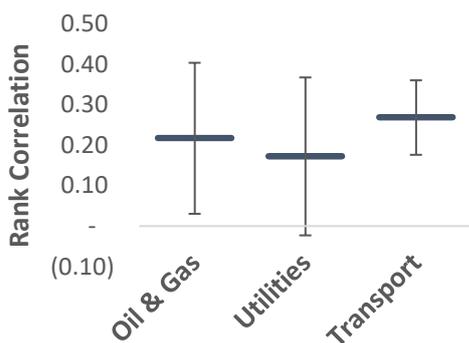
Previous analysis by 2° Investing Initiative shows that – beyond a sectoral perspective – companies with higher carbon footprints/intensities were not necessarily more exposed to transition risks as defined by equity research analysts. It should be noted that the finding that ‘climate indicators’ are not necessarily correlated with risk indicators applies beyond carbon footprinting. Analysis by 2° Investing Initiative/UNEP-Fi/WRI showed that the ‘oil production intensity’ of a company (in terms of share of \$ market capitalization) is not correlated with the share of high-cost capital expenditure of companies (see Fig 8, below). Of course, these indicators may by themselves not fully capture transition risk issues. However, they suggest that our evidence of more meaningful indicators does not correlate well with carbon emissions.

*Figs 8 and 9 – Lack of Correlation between Carbon Intensity and Value at Transition Risk according to Equity Research Analysts, at Company Level within Key Sectors (2Dii/Grizzly RI 2015)<sup>29</sup> and Correlation between Share of High Cost Capital Expenditure and Oil Production Intensity (2ii Climate strategies report.<sup>30</sup>*

<sup>28</sup> Moody's (2016) "Environmental risks: heat map shows wide variations in credit impact across sectors"

<sup>29</sup> 2° Investing Initiative & Grizzly Responsible Investment (2015) "Carbon Intensity ≠ carbon risk exposure"

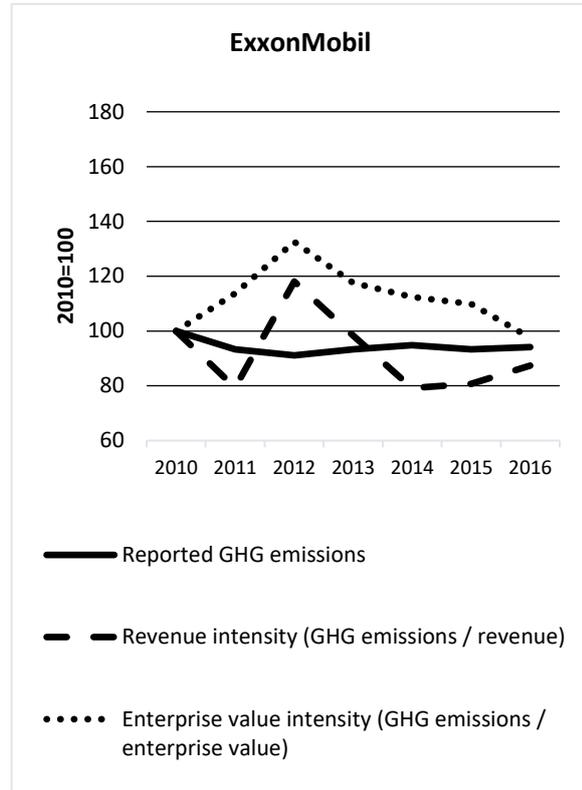
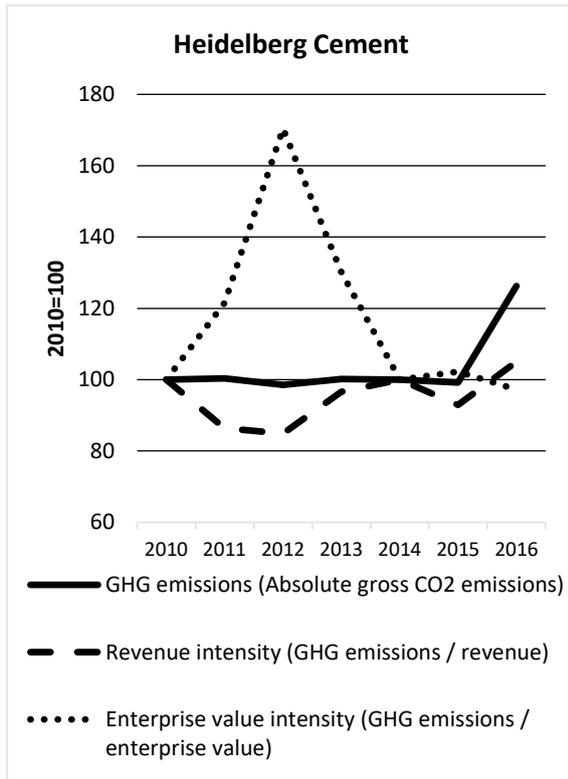
<sup>30</sup> World Resources Institute, UNEP-Fi & 2° Investing Initiative (2015) "Climate Strategies and Metrics"



- **Financed emissions – The wrong denominator** On top of the issues related to the numerator, index providers tend to use a denominator that also comes with inconsistencies. In order to enjoy the communication benefits of a single indicator, index providers usually calculate carbon intensity per unit of revenue, market capitalisation or enterprise value. In all cases, this indicator presents two major flaws:
  - It is disconnected from the economic service provided (e.g. production of electricity, provision of a mean of transportation, etc.). The optimisation of the carbon intensity can therefore come with a reduction of the exposure to the economic activity: rather than favouring electric utilities investing more in renewables, or car manufacturers producing more electric vehicles, the index can overweight utilities focused on distribution and car manufacturers with a strong credit branch (both activities being associated with revenues but no carbon emissions).
  - The value fluctuates due to factors not related to climate change such as stock prices, inflation or changes in currency exchange rates. The figure below shows how carbon intensity changes while the carbon footprint remains relatively stable, creating potentially highly misleading results concerning the performance of companies over time. To put this number into context, the emissions intensity of an index, whose market value increases by 10% will go down by 10%.

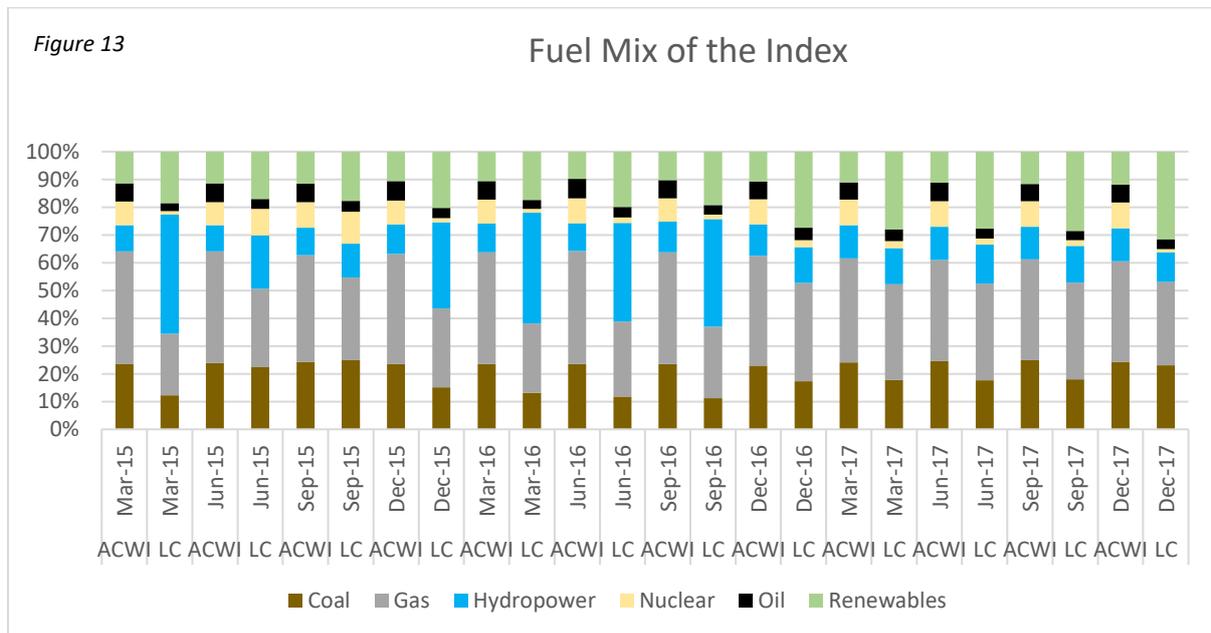
Figs 10 and 11. The Carbon Intensity per Euro is not Correlated with the Trend in Carbon Emissions

The absolute gross Scope 1 and Scope 2 GHG emissions of HeidelbergCement and ExxonMobil, and the intensity normalized by revenues and enterprise value respectively. Source: Authors, based on Bloomberg data and company reporting.



As a result of these various flaws, low carbon indices exhibit random variations of their exposure to key energy technologies, as exemplified by Figure 13 (below) for the energy mix of the power sector. The chart shows changes in fuel mix of the MSCI ACWI and the ACWI Low Carbon Leaders Index over the past ~3 years. Despite maintaining constant calculation rules, the fuel mix oscillates significantly, suggesting external biases. Turning these types of indices into alternative benchmarks may thus lead to significant month-on-month fluctuations and volatility in terms of performance versus alternative sustainability metrics.

One straight-forward solution is to require that carbon footprint indicators should always be linked to the underlying economic activity when used to compare the climate performance of companies (e.g. CO<sub>2</sub> / t of cement / MWh).



## 5) ...HOW CAN WE LIVE HAPPILY EVER AFTER – IMPLICATIONS FOR THE EU REGULATION

The above-described flaws clearly call for an alternative to using ‘low carbon’ indices as they are calculated today. So, in this context, which measures could the European Commission take concerning this topic? The following summarizes the current text of the EU regulation in its Annex regarding the type of criteria that should be reported by benchmark / index providers and challenges as well as potential alternatives.

### Methodology for low-carbon benchmarks

Current EU Regulation framing	Potential alternatives
<p>(a) “...the list of underlying assets that are used for calculating the low-carbon benchmark”</p>	<p>A list of assets helps identify companies, but as a pure list may not be meaningful, nor easily processed for users. To the extent compatible with the business model, more detailed deviation of asset weights relative to parent benchmarks (should they have been applied) may be meaningful to determine the effect of the selection and weighting factors on the outcome.</p> <p><b>The information content suggested herein could be enhanced.</b></p>
<p>(d) the criteria for and the methods of how the low carbon benchmark measures the carbon footprint and carbon savings associated with the underlying assets in the index portfolio</p>	<p>These criteria is limited exclusively to carbon. As evidence, a significant share of indexes use alternative criteria (e.g. scoring).</p> <p><b>The criteria and methods of measurement should not be specific to carbon, but relate to the actual indicators mobilized in the index.</b></p>
<p>(h) the type and source of input data used for the selection of assets or companies eligible for the low carbon benchmark, including: (i) emissions from sources that are controlled by the company...</p>	<p>As highlighted above, emissions data is not a meaningful data point for low-carbon benchmarks, unless they reflect a comprehensive scope in terms of the numerator (e.g. Scope 3) and in the denominator are linked to the underlying economic activity.</p> <p><b>Emissions data should be explicitly linked to the volume of products and services by type (e.g. ton of cement, MWh) that are associated with the emissions levels.</b></p>
<p>(i) “the criteria for and the methods of how the low carbon benchmark measures the carbon footprint”</p>	<p>Financed emissions indicators are not a meaningful metric to compare the relative climate performance of companies or portfolios.</p> <p><b>This criteria should not be required as reporting as it will suggest to users that this indicator is a meaningful way to compare indexes. It is not.</b></p>

*Methodology for positive carbon impact benchmarks*

Current EU Regulation framing	Suggested alternatives
<p>The administrator of a positive carbon impact benchmark, in addition to the obligations applicable to the administrator of a low carbon benchmark, shall disclose the positive carbon impact of each underlying asset included in the benchmark and shall specify the formula or calculation that is used to determine whether the emission savings exceed the investment asset's or company's carbon footprint ('positive carbon impact ratio').</p>	<p>The data quality and inconsistency of approaches related to avoided emissions – described above – suggest that here too, positive carbon impact ratios should be not be reported so as to avoid being misleading.</p> <p><b>Specifically, indexes seeking to increase exposure to positive opportunities should document their share of exposure to assets aligned with the EU Taxonomy Framework under development or related 'green' indicators – including a potential reference, where possible, to EU benchmarks (see description below).</b></p>

In addition, adjusting the existing criteria, the following criteria should be considered:

- **Data uncertainty and estimation.** Representations of the data uncertainty associated with the data points used to calculate the index, including the number of data points that were estimated as a percentage of the total data points mobilized, as well as the estimated uncertainty of the estimates at individual data point level. Estimation approaches should also be identified and revealed. For example, an index that advertises 20% lower carbon footprint with a 30% estimation uncertainty may raise some concerns for market actors.
- **Share of total portfolio emissions.** When using emissions or alternative data (e.g. asset-level data) that is based on incomplete data (e.g. excluding Scope 3, limited to certain sectors), the index / benchmark should provide information as to the percent of emissions against which the low-carbon benchmark is being optimized. For example, a number of low-carbon benchmarks advertise reductions in the carbon footprint by 50% or more. Given that this is limited to Scope 1 and 2 however, even leaving data uncertainties aside, in terms of a holistic carbon footprint including banks Scope 3, this carbon footprint reduction may be closer to 20% or less.
- **Performance relative to EU-policy defined benchmarks.** Low carbon index performance should specifically and explicitly report on indicators that relate to the EU policy-defined benchmarks. This could in the first instance relate to EU or international scenario policy roadmaps related to the 2°C objective across key sectors (e.g. fuel mix in the power sector, powertrain shares in the auto sector, emissions intensities across industrial sectors). Such a dashboard could be created by the Technical Expert Group and build on existing benchmarks developed by EU-funded research programmes (e.g. SEI metrics). As publicly available benchmarks, they can be used across data providers and consultants without creating a commercial monopoly.
- **Address mis-selling.** Index factsheets are frequently advertised as 'reducing transition risk' or 'having an impact'. The regulation should specifically address the marketing of these benchmarks in order to avoid 'risk-washing' or 'greenwashing' with regard to the underlying role of these indexes and the indirect and uncertain (and indeed potentially non-existent) impact of these products on the real economy.

In addition to specific recommendations for the providers of benchmarks, it may also be relevant to explore disclosure among users of benchmarks. The use of benchmarks and indexes in funds may be complemented by other climate actions, notably engagement. When low-carbon benchmarks are used by investors, this additional information should be included.

**Supporting the development of an EU-policy aligned benchmark.** Assuming the methodological framework and data are available, the design and calculation of an index is simple and relatively cheap (about 50 to 150k€, or even less in some cases). An index provider, an asset manager, or even any organisation can initiate its creation (if its purpose is primarily to track the performance of a list of companies - vs. investing in them). The European Commission is already providing financing through various programs (H2020, Life, Climate KIC) that can lead to the creation of climate-themed indices. The main obstacle is to ensure the mainstream adoption of an index by institutional investors, either as a performance benchmark (reference to track the relative performance of active funds) or as an investment vehicle (passive funds based on the index). To date, all climate-themed indices (i.e. pure environmental indices, excluding low-carbon indices) have been sold and perceived as ‘thematic’ indices, which are not designed to mirror the market as a whole. They are therefore disqualified ‘by design’ to become a benchmark for mainstream investors or the basis for blockbuster index-funds, and are meant to remain a niche market. In this context, the European Commission definition of criteria for EU-policy aligned benchmark can help restate the ‘market benchmark’ concept, consistent with a broadly-diversified, EU / Paris Agreement-aligned benchmark, rather than a ‘tweaked’ market benchmark.

Related to this initiative, the European Commission can promote index(es) tracking the performance of listed green companies (e.g. short list of companies highly exposed to the upcoming green taxonomy), or/and listed companies aligned with a 2°C scenario.<sup>31</sup> No policy action is necessary here: several index providers will likely be happy to develop innovative indices if the European Commission decides to promote them. Partnerships can be developed with the media and various institutions to advertise the performance of the index on a regular basis. H2020 and Life programs can be leveraged to facilitate such an action.

**Challenges of indices more broadly – The tragedy of the horizons.** The HLEG’s debates on indices on the one hand, and the mismatch of time horizons on the other hand, revealed an issue that goes beyond the question of climate (not consensual among the HLEG members though): the time horizon of the various intermediaries involved in the pricing of stocks is limited to 1-3 years.<sup>32</sup> More precisely:

- The formation of stock prices is heavily influenced by day traders (representing the bulk of transactions),
- Long-term equity investors who could in theory counter-balance this short-term focus actually turn their portfolio every 20 months on average.<sup>33</sup>

In such a context, while the upside risks (e.g. long-term growth in the cash flows of Tesla) might be correctly priced due to the existence of players focused on assessing and seizing these opportunities (e.g. VC, PE, small caps investors), downside risks are unlikely to materialize in this 1-3 year window (e.g. drop in sales of ICE vehicles and impact on the related cash flows of car manufacturers). This also

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<sup>31</sup> For example, in the context of the EC-funded SEI Metrics project, various rules for calculating such indices have been designed and discussed with index providers and investors. Examples include: a) only companies with investment plans compatible with the Paris agreement; b) portfolio weighted to ensure alignment of aggregated investments levels with the scenario, c) similar approaches based on the stock of assets in 2022 (e.g. energy mix of power). The financial performance of such portfolios is discussed in Frankfurt School UNEP Collaboration Center (2018) “[The Risk & Return of SEI Metric Equity Portfolios](#)”.

<sup>32</sup> See HLEG final report and the 2° Investing Initiative’s [Tragedy of the Horizon](#) series of publications.

<sup>33</sup> The Generation Foundation, Mercer & 2° Investing Initiative (2017) “The Long and Winding Road”

represents a shortcoming of the kind of analytics developed e.g. in the EU-funded SEI metrics project – although this project took specifically an ‘alignment’ angle.

Long-term risks are likely to be mispriced since not player actually focus on assessing these risks and deriving value from anticipating them far in advance. As a consequence, in the context of the new definition of investors’ duties, the HLEG concluded that institutional investors with long-term liabilities should pay more attention to these long-term risks. This new approach might eventually involve switching to ‘*long-term indices*’ that correct these potential mispricing effects. Such indices will be derived from cap-weighted mainstream indices (diversified from a sector and geography perspective) but tilted to underweight activities that might be impacted by long-term risks and trends in sectors with limited adaptive capacity (e.g. coal power for electric utilities). The considered risks and trends would obviously involve climate-related risks, but would allow for the creation of mainstream indices, not limited to a niche market. Such an approach would be an option for turning climate-aligned indices into mainstream investment vehicles for institutional investors.

The direct intervention of the European Commission is unlikely to fundamentally address the challenges related to climate-themed indices. Given the lack of direct environmental benefit associated with investments into climate-themed indices, one can even ask what the policy goal would be associated with such an action. However, creating a dynamic on indexes suggest the need to strengthen related initiatives by the European Commission, notably the call for long-term scenario and risk analysis by financial supervisory authorities, the issue of fiduciary duty, and the reducing of short-term incentives in the financial sector more generally.

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