For professional / qualified / institutional clients and investors only

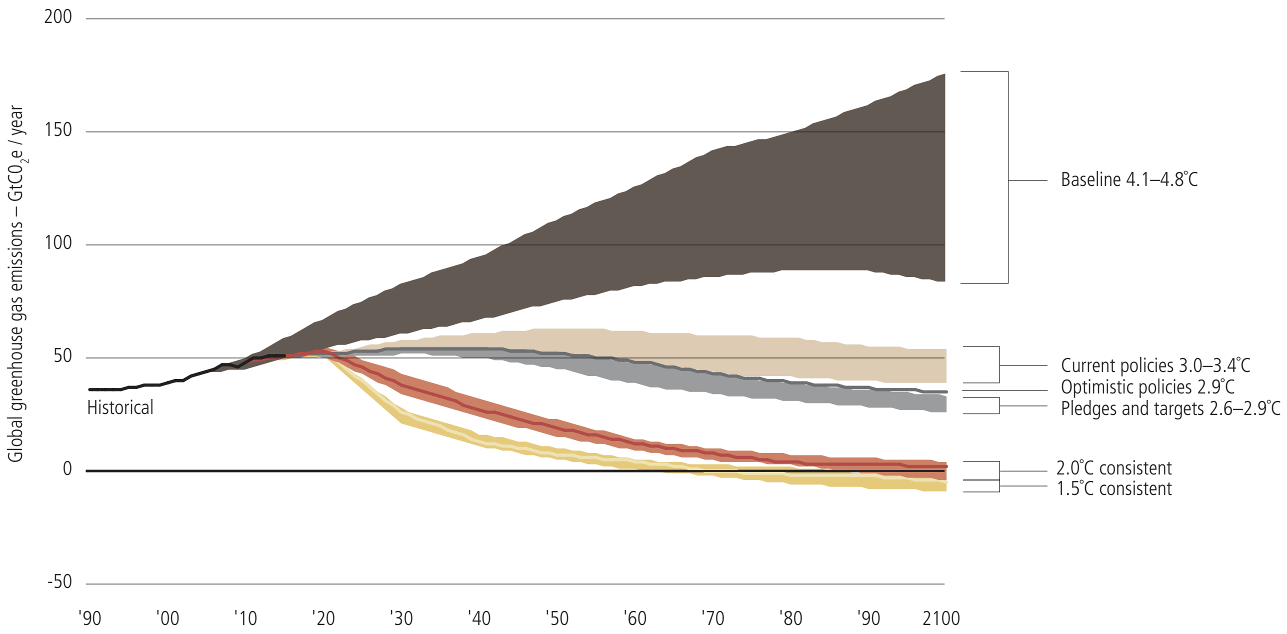
Are you climate aware?

Ten index investor questions about managing climate risk

Passive equity investors face a variety of options for bringing their index investments in line with sustainability objectives. A common approach, benchmarking to ex-fossil fuel indices, may have unintended consequences.

Exhibit 1: 2100 warming predictions

The Climate Action Tracker is an independent scientific analysis that tracks government climate action against the globally agreed Paris Agreement aim of holding warming well below 2°C, and pursuing efforts to limit warming to 1.5°C by 2100.



Source: Climate Action Tracker, September 2019, prepared by Climate Analytics, a non-profit climate science and policy institute based in Berlin, Germany.

Many investors are uncertain about how best to align their passive equity investments with the global transition toward a lower-carbon future. A common response is divesting high carbon-output companies by investing in tracker funds that are benchmarked to ex-fossil fuel indices. But there are consequences to this choice. By excluding fossil fuel investments, the indexed investor avoids some risks but also misses opportunities: some 'oil majors' are among the largest investors in alternative energy. Also, it is clear that a transition to a lower-carbon world will take time, and anyone who simply excludes those companies is unable to exert shareholder influence on the means and timing of needed changes.

We believe the more responsible approach may be for investors to maintain a thoughtful allocation to carbon-emitting companies with the twin goals of supporting positive change through proactive engagement with the companies that appear to be the least well positioned while also supporting companies that are developing new, lower carbon technologies. At the same time, the more the portfolio is re-shaped away from the index benchmark the greater the chance that the investment returns will diverge. UBS Asset Management's Climate Aware strategy seeks to provide index investors with an innovative, rules-based strategy, designed to capitalize on the long-term transition to a low greenhouse-gas (GHG) emissions economy by investing more in companies at the heart of this transition as well as those adapting their operating models.

In 2019, UBS-AM surveyed over 600 institutional investors worldwide, representing more than €19 trillion in combined AuM about their view of sustainable investing. A majority said they believe environmental factors will matter more to their investments than traditional financial criteria over the next five years. Following are the 10 questions we hear most often from investors about managing climate risk in their passive equity portfolios and how the Climate Aware strategy addresses those issues.

Q1. Which is more important for investors in the lower-carbon transition: mitigating risks or seeking opportunities through the carbon transition?

A: Investors, lenders and insurers don't yet have a clear view of which companies will struggle, endure or prosper as the environment changes, regulations evolve, new technologies emerge and customer behavior shifts. Without this information, financial markets can't price climate-related risks and opportunities effectively.

Given the uncertainties of climate change and the lower carbon transition, UBS-AM researched the role of scenario analysis as a potential tool for understanding the possible impacts on investment portfolios. In the development of our Climate Aware strategy, we have created a methodology for understanding the alignment of individual investments and a global investment portfolio with a 2° Celsius pathway as defined by the International Energy Agency (see Exhibit 1). The transition to lower carbon introduces two broad categories of risk: physical and transition-related risks as barriers to investment (see Exhibit 2).

Exhibit 2: Climate-related risks

	Physical risks		Transition-related risks			
	Acute risks	**Chronic risks**	**Policy and legal risks**	**Technology risks**	**Market risks**	**Reputation risks**
Examples of potential risks	Increased risk of extreme weather events	Changes in climate and landscape, e.g. coastal areas or rain forests	Imposition of mitigation policies or regulation and exposure to litigation	Investment and transition costs to a low-carbon technology Uncertainty of investment decisions	Uncertainty regarding consumer behavior, market signals and supply chain	Stigmatization of industry Changes in consumer preferences and stakeholder expectations
Examples of possible financial implications	Reduced revenue from negative impacts on production facilities, sales and workforce Increased operating, capital and insurance costs, as well as asset depreciation due to damages		Increase in operating and/or litigation costs Forced capital depreciation due to policies	Value loss of existing assets Reduced demand for products and services Costs of developing and procuring new technology	Reduced demand Increased costs from unexpected market changes in supply chains	Reduced revenue due to decrease in demand, production, capital availability and employee attractiveness

Source: Adapted and simplified from Taskforce on Climate-related Financial Disclosure (2017a).

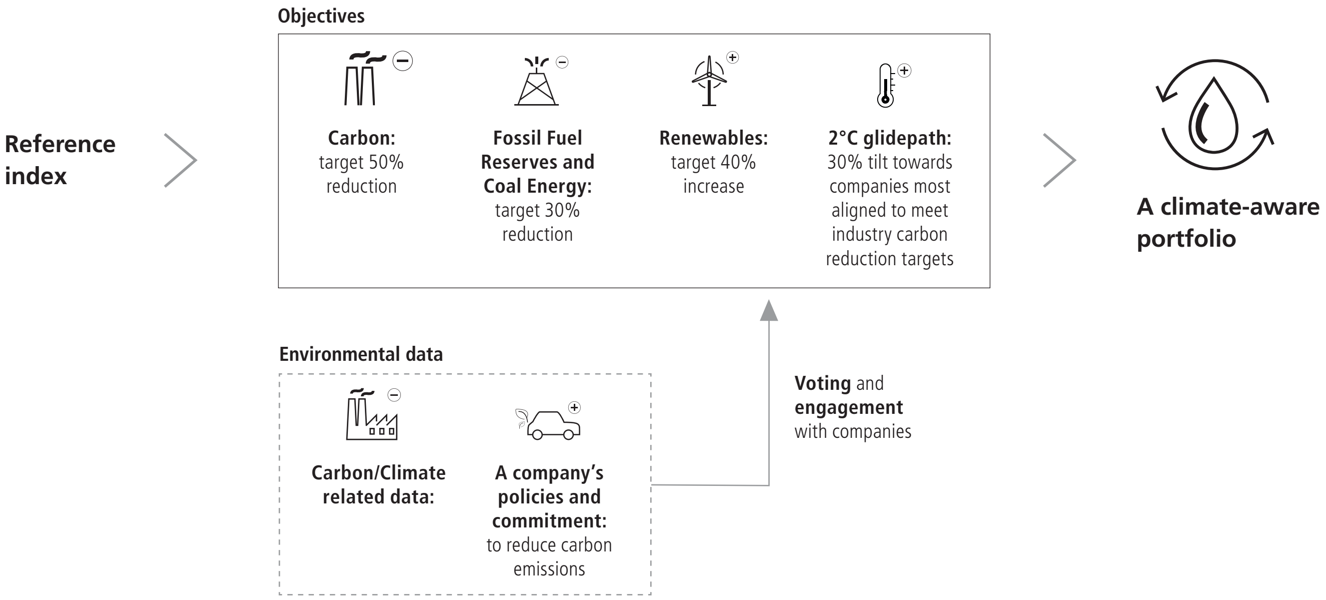
Our approach applies ‘tilts’ to an equity index *away* from companies we believe are less likely to be in line with the low carbon economy and *towards* companies we see as most aligned to meet industry carbon reduction targets (see Exhibit 3). By analyzing how companies are positioned for the transition to a low carbon economy, the strategy seeks to reap the benefits of that shift. The portfolio targets:

- At least 40% higher exposure to companies that generate renewable energy and supporting technology compared to the parent index
- A 30% tilt towards companies most aligned to meet industry carbon reduction targets in line with the 2˚C scenario
- 50% reduction in carbon intensity

Key features of the UBS-AM Climate Aware strategy:

- Minimal deviations vs. market capital weighted benchmark
- Low tracking error and low turnover
- No (explicit) exclusions policy
- Meaningful carbon reduction
- Aligned to forward-looking carbon reduction targets
- Tilted to renewable energy
- Potentially lower performance risk
- Low cost
- Customizable

Exhibit 3: Portfolio construction process



Source: For illustrative purposes only. UBS Asset Management, June 2020.

Q2. How are you measuring vulnerability to carbon transitions or climate change?

A: Areas we assess (at individual investment or issuer level) are:

- Regulation Risks: For example, the effect on costs of carbon pricing on large GHG emitting companies
- Market Risks: Such as the move away from products with high carbon- and energy-intensity
- Technology Risks: Such as the large scale substitution of products and services
- Physical Risks: Such as the risk to fixed assets and/or supply chains
- Reputational Risks: Such as the stigmatization of an industry

Q3. Does your analysis indicate whether carbon sensitivity is priced into valuations?

A: Rather than responding that carbon sensitivity is priced into valuations, we see more of a differentiated effect on valuations as the response to climate changes develops. We see the potential for winners to come from climate change leaders and innovators, renewable energy generators and service providers, electric vehicle manufacturers and materials suppliers. In our portfolio construction we control the exposure to BARRA value factors. Thus we control any unintended exposure to value or any equity risk premia.

Thinking about climate change in terms of time frame raises two clear challenges. The first relates to the fact that while climate change is generally accepted to be a long-term risk, the actions needed to tackle it are short-term. For investors this poses a fundamental problem. Put simply, existing short-term investment frameworks aren't designed to capture long-term risks. Second, institutional investors often carry obligations of being a long-term investor, evidence suggests some equity managers hold assets for an average of just 1.7 years. That offers analysts little incentive to extend their projections.

However, recent analysis conducted by German researchers, considered the question "When does it pay to be green?" using 68 estimations from 32 empirical studies. It focused solely on the materiality of climate change and carbon performance (Busch & Lewandowski, 2017) and came up with the following findings:

1. There is a positive association between carbon performance and financial performance.

2. The choice of indicators heavily determinates the strength and significance of empirical outcomes. In general, "relative emissions" are more likely to produce statistically significant results than absolute emissions.

3. This positive correlation is significantly higher in "market-based" financial performance (e.g. Market cap or total shareholder return (TSR) than in accounting-based financial performance).

Q4. How do you evaluate the underlying data you are using for your analysis?

A: Only 55% of companies in the MSCI ACWI index currently report on CO_2 data (see Exhibit 4). To mitigate this lack of information, we have developed a multi-vendor database for sustainable investment data, aggregating and filtering information to provide greater comparability between sectors and regions.

Exhibit 4: All databases use a combination of reported and estimated data

	Trucost	Sustainalytics	ISS	MSCI's Carbonmetrics
Coverage	– 4,000+ companies – 10 years of data – Scope 1, 2 and 3 – 30 analysts	– 10,000+ companies – Scope 1 and 2 – 120+ analysts (carbon and ESG)	– 40,000+ companies – Scope 1 and 2	– 9,000+ companies – Scope 1 and 2
Methodology	– Input-output economic model: resources companies use to produce goods and services, and the related level of pollutants – Integrates use and emissions of over 700 environmental sources	– Includes latest reported emissions data; for non-reporting companies, estimates data using company's market cap, revenue, employees and environmental score – 80+ estimation models for non-reporting companies	– Methodology developed with researchers from ETH Zurich – 150+ industry-specific models	– When company doesn't report data, MSCI applies one of four models: – Co. intensity model – Co. production model – GICS sub-industry model – Economic input-output life cycle assessment model
Notes	– S&P DJ indices utilise Trucost data – FTSE are collaborating with Trucost to construct custom indices	– In addition to carbon research, comprehensive ESG research	– EDHEC's ScientificBeta and STOXX indices utilise ISS data	– MSCI Low Carbon Target – MSCI Low Carbon Leaders – MSCI ex Fossil Fuels – MSCI ex Coal

Source: UBS Asset Management, MSCI, ISS, Sustainalytics, Trucost. Data as of September 2019.

We approach the uncertainties of carbon forecasts and impact on prices changes/profit margins by investigating drivers such as changing regulation, engaging with company management to understand how they are orienting their businesses towards a lower carbon economy, and incorporating what we find into our analysis and investment decision-making.

Q5. How do you evaluate a company's actions that aim to reduce emissions on a go-forward basis?

A: We consider changes in business practices, including capital expenditure and additional R&D. One example is our analysis of integrated oil & gas companies. We have found companies in this sector that have climate change-oriented strategies that include capex, acquisitions and R&D spending. We monitor the focus, scale and progress of these activities. In some cases these are included in our corporate engagement program on climate change.

We believe this is a more nuanced approach than simply overweighting the stocks of companies that are less dependent on fossil fuels relative to higher carbon-emitting peers. We believe this approach has two major limitations:

1. It only incorporates past or very recent information about the carbon footprint of each company. This approach does not take into account a company's forward-looking commitment to carbon reduction.

2. Carbon emission data is subject to estimation errors, as a component of carbon emission data per company is estimated by data providers.

Q6. What are your assumptions for policy implementation around carbon pricing, and how do these assumptions vary across geographies and industries? How dependent is your strategy on these assumptions?

Exhibit 5: The future of climate is hard to predict, especially when it comes to risk
We believe we're facing four main challenges that are creating barriers for investors:

1 Regulatory dynamics

2 Investment horizons

3 Data imperfections

4 Practical constraints on financial innovation

A: It is generally accepted that Northern Europe is the most advanced in terms of climate-related regulatory frameworks, but that's not to say concerns don't exist around the effectiveness, consistency and speed of implementation. Beyond the EU, Canada and China have both passed legislation, targeting investors and companies, designed to improve transparency around ESG considerations. In the US, the Federal Reserve Board and the Federal Reserve Bank of San Francisco have both recently published research highlighting the financial risks of climate change, but right now the appetite for regulation at a national level seems low.

Generally, we consider climate-related risks and opportunities as an input into our ESG integrated investment processes where we see these as financially material (see Exhibit 5). One starting point is the World Bank's analysis ("State and Trends of Carbon Pricing 2018", World Bank, 2018) as well as the range of carbon prices indicated by various climate scenarios (such as the International Energy Agency, Royal Dutch Shell's Sky Scenario). To test investment cases for different carbon price levels, our investment teams have access to Trucost data, other third-party ESG data and analysis, as well as proprietary UBS ESG insights based on our engagements with investee companies.

Given the scale of uncertainty and the reliance on national or local actions we do not make specific assumptions around timing, range of policies, or likelihood of implementation.

Q7. What do you view as your edge in this space as it evolves?

A: We believe the UBS Climate Aware Strategy differs from other carbon strategies because:

- The Strategy manages to a traditional market capitalization index, for example the FTSE Developed Index. The Strategy then quantitatively over- and underweights stocks in line with the Strategy's objective. It is not an alternative index strategy, or alternative beta Strategy.
- The Strategy has relatively less exposure to companies taking part in the transition to a low carbon global economy but which are yet to adapt their businesses to meet globally-agreed climate change goals. However, the Strategy will not actively divest these companies and this constitutes a differentiator with respect to strategies that rely only on reducing a portfolio's carbon emission.
- The Strategy includes a dedicated engagement program and specific climate aware voting policy that adds climate-related guidelines when voting shareholder resolutions, director elections, political donations, the report and accounts, and the audit committee report.
- We also look at both quantitative and qualitative data to better determine which companies will be able to best navigate the reduced carbon environment.
- We have done research in patents data, supply chain and physical risks (amongst others) such that we can keep our edge in this space.

Q8. Is an ideological rationale embedded in your approach?

A: Irrespective of one's views on climate change, it poses key investment risks. The risks extend across the investment universe, from equities through to corporate bonds, property and, potentially, government bonds. As climate risks start to impact the wider economy, acceptance is growing that investment managers need to incorporate those risks within their investment processes. Given our fiduciary duty to investors, we have expanded climate research, developed a climate focused engagement program and launched investment strategies that recognize climate-related impacts on certain asset prices, distribution of returns and opportunities for alpha generation.

Q9. How important is it for an investment team to have a robust strategy for adapting to regulatory changes and/or changes in investor attention?

A: Within UBS-AM, the Sustainable and Impact Investing ("SI") strategy is overseen by an Executive Management Committee comprised of senior leaders across the business. The Committee addresses a range of topics including our response to climate change.

Our SI analysts work with our portfolio managers to assess and manage climate-related. At UBS-AM, we use ESG integration to embed our understanding of climate change causes and effects into our investment decision making. This enables us to focus on the investment decisions where we see climate change and related issues as material financial factors. For fossil fuel producers (integrated oil & gas, oil & gas exploration & production, coal mining) the challenges are at the level of business model disruption where managements are required to identify the right pathway and timing for transition. For large emitting companies (electric utilities, materials, transportation and energy) the challenges are to deploy lower carbon technologies where available. For companies whose products rely on fossil fuels (particularly automotive and aerospace) the challenge is identify the right path and timing to reposition with respect to the requirements of their customers.

Moreover, the SI analysts and investment analysts work together to engage with companies on behalf of clients to discuss approaches to mitigating climate change risk, as well as actively voting on shareholder resolutions to improve transparency and disclosure around climate-related reporting. This includes participation in the global Climate Action 100+ collaboration.

Q10. Does UBS have a firm-wide strategy in place to identify the risks and opportunities related to climate change?

A: We regularly report on the implementation of our firm-wide climate strategy which follows the Task Force on Climate-related Financial Disclosures (TCFD) recommendations.

Our climate strategy underlines our commitment to the United Nations Sustainable Development Goals (SDGs) (see Exhibit 6) on climate action and on affordable and clean energy and supports an orderly transition to a low-carbon economy, as defined by the Paris Agreement. As one of the world's largest managers of private and institutional wealth, we play an active role in shaping a sustainable future. We aim to be a leading financial provider in enabling investors to mobilize private and institutional capital to climate change mitigation and adaptation while supporting the transition to a low-carbon economy.

Exhibit 6: United Nations Sustainable Development Goals: A roadmap for change

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future. At its heart are the 17 Sustainable Development Goals (SDGs).

Source: United Nations

At UBS-AM we see a clear investor appetite for directing capital in climate solutions. We address this by continuously developing our offering in sustainable finance and actively engaging with clients. Our climate strategy supports our clients and our firm preparing for success in an increasingly carbon-constrained world.

We support this goal through our innovative financial product offering and advisory, as well as through embedding climate risk in our firm wide risk management framework and in our own operations. Our climate strategy focuses on four pillars:

- **Protecting our own assets:** We seek to protect our assets by limiting our risk appetite for carbon related assets and by estimating our firm's vulnerability to climate related risks using scenario based stress testing approaches and other forward looking portfolio analyses. We have reduced carbon related assets on our balance sheet to 0.8% or USD 1.9 billion as of December 31, 2019, down from 1.6% at the end of 2018 and 2.8% at the end of 2017.
- **Protecting our clients' assets:** We support our clients' efforts to assess, manage and protect them from climate related risks by offering innovative products and services in investment, financing and research. We actively engage on climate topics with companies that we invest in; AM has implemented an engagement program with 50 companies from oil and gas and utilities sectors and we voted on 44 climate related shareholder resolutions during 2019.

- **Mobilizing private and institutional capital:** We mobilize private and institutional capital towards investments facilitating climate change mitigation and adaptation and in supporting the transition to a low-carbon economy as corporate advisor, and/or with our lending capacity. In 2019, our climate-related sustainable investments rose to USD 108 billion from USD 87.5 billion at the end of 2018, and the deal value in equity and debt capital market services, and in financial advisory services, related to climate change mitigation and adaptation, rose to USD 87.2 billion, from USD 56.5 billion in 2018.

- **Reducing our direct climate impact:** We continue to reduce our greenhouse gas (GHG) emissions and increase the firm's share in renewable energy. We have committed to using 100% renewable electricity by mid 2020. This will reduce our firm's GHG footprint by 75% compared with 2004 levels. At the end of 2019, we had reduced our GHG emissions by 71% compared to baseline year 2004. Has the organization considered the impact of climate-related scenarios on future outcomes in terms of expected risk and return, as well as the identification of new opportunities?

  UBS has been using global scenario-based approaches since 2014 to assess our exposure to physical and transition risks associated with climate change (firm-wide). We have performed both top-down balance sheet stress testing (across the firm), as well as targeted, bottom-up analysis of specific sector exposures in short, mid-, and long-term horizons. We also assessed the vulnerability of loan portfolios secured by real estate in Switzerland and the US to physical risk by mapping the location of collateral in over 6,000 postal code areas against Swiss Re's CatNet tool, which aggregates a large dataset of observed natural hazards such as wildfire, river and pluvial flooding and tropical cyclones.

  Within UBS-AM, we are at an early stage of exploring how we could use scenario analysis more widely for the purposes of risk management across our products and services. In this regard, we participated in the Institutional Investors Group on Climate Change (IIGCC) working group on scenario analysis and contributed to the report "Navigating Scenario Analysis", published November 2018. We have developed a methodology for alignment with a 2-degree scenario which we use in the management of our rules-based Climate Aware equity strategy. This takes into account the probability that a company that the strategy invests in is aligned to the IEA Energy Technology Perspectives (ETP) 2 degrees scenario and the transitional pathway for the appropriate sector. This is complemented by other data on transition risks and opportunities.

  In terms of investment opportunities, climate factors have been integrated in our active investment decisions for many years. With the more pronounced attention for this topic, its relevance and influence on investment decisions has further risen.

- UBS-AM has a 3+ year live track record of a dedicated climate methodology that has been applied to several underlying equity indices. More recently, this methodology has also been transported to fixed income indices, allowing us to offer climate aware fixed income solutions.

- Within Switzerland UBS-AM has been very active in terms of raising capital for clean energy infrastructure (CEIS I/II). UBS-AM has also hired a team that will run a long short hedge fund strategy on the energy economy, focusing on climate winners in the long term and climate laggards in the short term.

- We have also developed very robust stewardship services around climate change.

  - In 2019, ShareAction, an international organization focused on advancing responsible investment, awarded UBS-AM as the best performing asset manager in climate proxy voting in its report, "Voting matters – Are asset managers using their proxy votes for climate action?"
  - We have been rated a leadership band for engagement and voting on climate by InfluenceMap.
  - We are one of the most active participants in the Climate Action 100+ collective engagement group, leading the engagements with some of the most prominent and key targets of this group in terms of changing their view on climate risk for their business model. UBS-AM presently leads eight coalitions led by Climate Action 100+ and has been asked to lead more coalitions given its successes.
  - Finally, we have added climate reporting as one element of our mandate reporting, creating insights for our clients on their current climate profile and leading into conversations how to improve this.

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