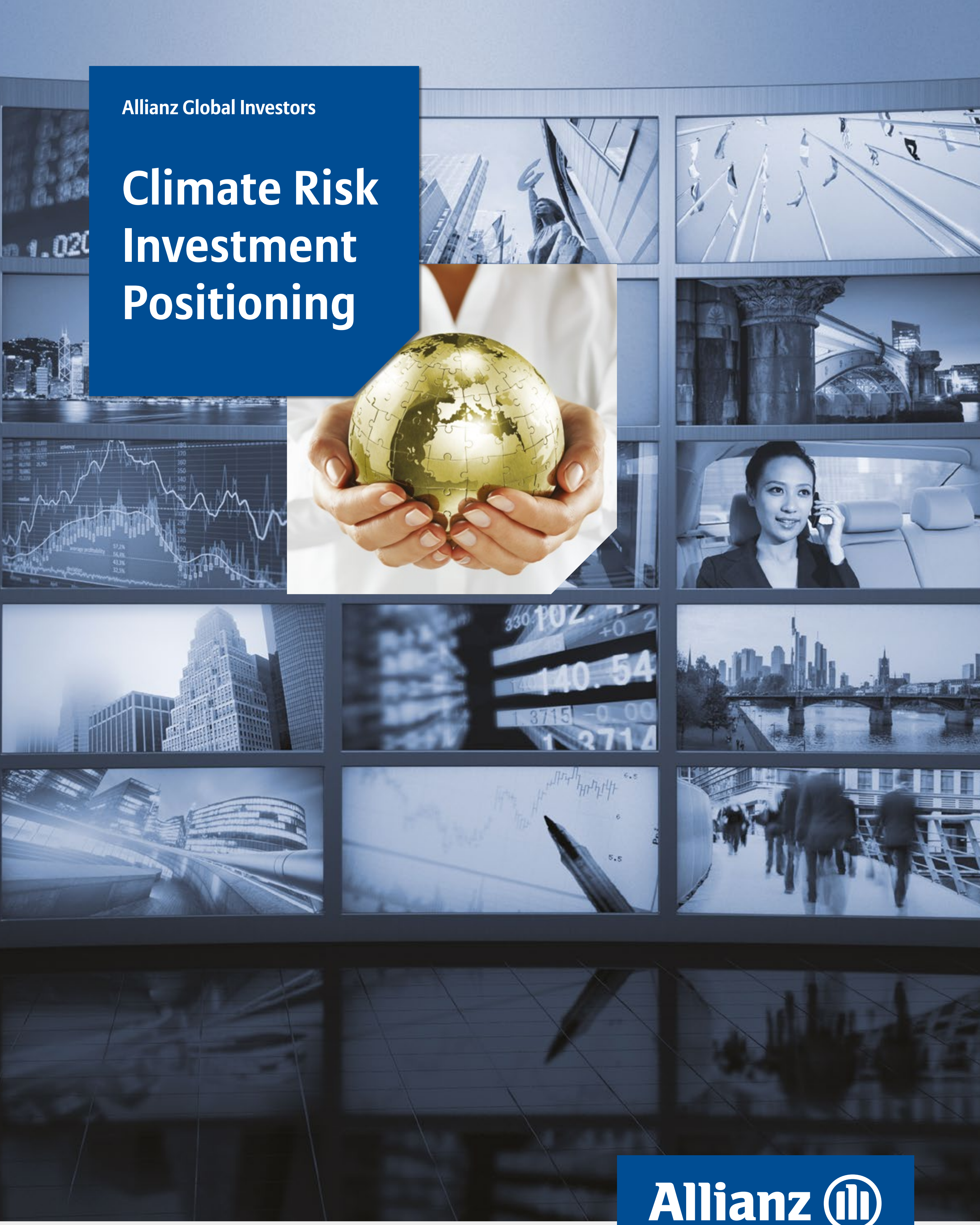
Allianz Global Investors

Climate Risk Investment Positioning



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Understand. Act.

Climate Risk Investment Positioning

Pre-word

This investment positioning document aims to summarize Allianz Global Investors' (AllianzGI) view related to climate change risk. We consider climate risk an important long-term risk factor to be considered as part of investment decision making.

AllianzGI believes that material ESG factors such as climate risk may impact the future performance of assets. Furthermore, we are convinced that the ESG investment 'value add' can only be fully capitalized through an active investment management approach. Our ESG approach comprises ESG tail risk analysis and active stewardship.

AllianzGI is a member of the Institutional Investors Group on Climate Change (IIGCC) and the CDP.

Does AllianzGI believe climate risk is real and important?

Unlike traditional financial risk factors, such as market price risks, it is harder to assess climate change risks for investments. There is no data time-series or reliable pricing modelling available. Still, we think there is enough scientific evidence to make the case for climate change risk.

As per recordings of leading meteorological organisations such as the U.S National Oceanic and Atmospheric Administration (NOAA) and NASA's Goddard Institute for Space Studies (NASA GISS), the Earth's average temperature has been rising post-industrialization.

We accept the scientific assumption that global warming is triggered by man-made Greenhouse Gas ("GHG") emissions. Carbon dioxide concentration in the atmosphere has been rising to reach an all -time high in 2016. The Intergovernmental Panel on Climate Change (IPCC) has built scenarios that show GHG emissions need to be strictly limited to keep climate change in check.

There has also been strong progress to curb global warming and climate change. The Paris COP 21 global climate treaty aims to keep 1.5 – 2 degree global warming in check. It has been ratified by most of the highest GHG polluters and was signed by the US, China, India, Europe and more countries. This political will implies a high-speed trajectory with reference to net zero carbon emissions in the second half of the century. For many developed economies that means that they must reduce their carbon dioxide emissions by 95% by 2050.

This transformation to a low carbon emitting economy implies risks and opportunities for specific industry sectors and corporates. We suggest that any investor, especially institutional asset owners with a long-term investment view such as pension funds, need to address climate risk as part of their investment strategy.

Do you think that climate risk has already been priced in by capital markets?

From an asset class perspective, we consider listed and private markets equities, corporate bonds and coal/oil/gas commodities especially exposed to climate change risk.

In our view, climate risks have not been priced in by capital markets yet, at least not to a significant extent. The most available evidence is the recent underperformance of "coal corporates" in the utilities and mining sector and many high profile bankruptcies such as Arch Coal & Peabody Energy. Fossil fuel commodity prices have been driven more by over-supply in our view.

Pricing is expected to become more relevant in the context of an increasing number of carbon cap, tax and trade schemes for example the one recently started in China.

What are stranded assets?

One of the investment risks discussed in the context of climate change is so called 'stranded assets'. These are assets which may not deliver expected returns because of regulatory, technological and economic reasons connected to climate change risk.

In the short term, the assets considered most exposed are fossil fuel reserves, which may experience accelerated write-offs if they cannot be deployed any more due to regulatory carbon emissions caps or heavy taxation.

In the context of climate change the assets at risk of becoming stranded first are likely to be fossil fuel reserves: coal, oil and gas. This concerns in particular those fossil fuel reserves which are subject to controversial, complex exploration practices, for example oil sanding, shale and fracking, which are exploited through high cost activity in remote regions such as deep and high seas, or the Arctic and which are comparatively high carbon dioxide contributors within the fossil fuel energy mix, such as certain types of coal.

Q Do you think there is a risk of stranded assets?

We accept the assumption that there are more fossil fuel reserves available globally than could ever be burned to keep global warming and climate change in check. Capital invested today into future oil, gas and coal production is at risk of being stranded or wasted and shareholders may not get the returns they have modelled for. We quantify this risk in terms of potential market value destruction.

In our research based risk assessment we take a differentiated and corporate specific view: broad brush top-down assumptions deliver flawed investment signals. Sectors we consider particularly exposed are mining, energy, utility and transportation. Even within these sectors, in our view there can be large differences to stranded asset risk exposure.

Q How does AllianzGI incorporate climate change risk into its investment research?

AllianzGI's dedicated ESG research team and mainstream analysts monitor and assess the science, regulatory response and business implications of climate change very closely. The ESG research team works alongside fundamental analysts and portfolio managers to ascertain the financial implications for individual stocks. We analyse a number of ways that climate change can be a driver of stock performance. For example we research:

- How commodity prices such as oil prices may be negatively impacted from uptake of low carbon transportation.
- How the growth of deployment of renewable energy may impact the solar and wind value energy chain as well as utilisation rates for traditional thermal power plants.
- How carbon prices, tax credits and subsidy schemes for fossil and renewable energy impact clean technologies and whether or how fast they disrupt incumbent business models.

As part of its intrinsic ESG rating analysis, the AllianzGI research team looks at extreme environmental risks on a corporate issuer level, including possible tail risks from climate change transition risks. Research views and investment opinions are exchanged and documented on a global proprietary research platform -"Chatter" - which can be accessed by all investment professionals. In the light of our ESG integration efforts all AllianzGI portfolio managers, therefore, can consider climate change risks in the investment strategies they manage.

Allianz Climate Solutions

AllianzGI has access to the climate risk expertise of its sister company, Allianz Climate Solutions (ACS). ACS is a subsidiary of Allianz Asset Management AG and serves as the centre of competence for climate change with a focus on renewable energy within Allianz Group. ACS is responsible for the climate-related strategy development within Allianz Group and serves as catalyst for climate-related product development.

In the past AllianzGI and ACS have performed joint research on topics like carbon price modelling as part of fundamental analysis, regional and asset class specific climate risks as well as causal climate risk structuring.

Q How does AllianzGI define climate change risk?

Our research and assessment of climate change investment risk is built on a clear risk definition. On a macro, top-down level, we view climate change risk as systemic and global in nature. Ultimately, this risk is non-diversifiable and cannot be hedged unless we find a second inhabitable planet in close reach.

On a sector and corporate level we see these forward looking risk factors:

a) Transition risk:
We consider this risk factor the ability of a corporate to adjust its business model on the way to a low GHG emitting, 2° C global warming compliant economy.

Transition risk includes technology and energy transition risks which are partly driven by grid-price parity assumptions fossil vs. renewable energy. Transition risk encompasses stranded assets risk.

b) **Regulatory risk:**
Regulatory risk triggers unexpected disruption due to strong GHG regulations, for example carbon cap and trade and carbon taxation. It has the potential to amplify sector and corporate transition risk.

c) **Physical climate change risk:**
Physical climate change risk defines the potential impact of natural catastrophe events and extreme weather patterns such as extreme storms, floods, heat periods etc. Such events do not only concern for example property casualty (re-) insurance corporates but may possibly also lead to disruption in supply chains of internationally operating corporates. For example, in the past severe flooding in Thailand led to global shortages in car-paint production with impacting on German car manufacturing. Moreover, extreme weather may lead to spikes in global food prices, clean water access etc.

In summary, our key assumptions across the three climate risk factors are as follows. We consider the transition risk of corporates moving into a low-carbon emitting economy to be broad and to go beyond energy supply transition only. Transition will concern energy-using processes and products, agriculture and forestry, waste management etc. We are at the beginning of this transition and it is far from over; business disruption looms. In our view it is also not clear that, despite large scale efforts following COP 21, we will avoid the 2°C warming which scientists are so warning of. It is likely that both mitigation and adaptation will have major ramifications for investors.

Q How does AllianzGI incorporate climate risk it into its products?

We have analysed paths and methods to integrate climate change risk into strategic asset allocation and consider bottom-up climate risk integration into portfolio strategies important.

For mainstream investment strategies, all AllianzGI portfolio managers have access to the ESG and climate risk research including intrinsic issuer ESG ratings. For many sectors, climate change already poses a material consideration for fundamental analysts and, as such, is reflected in the stock ratings used to inform investment decisions.

Next to mainstream strategies AllianzGI offers climate thematic and impact driven funds such as green bonds, climate transition equity and illiquid renewable energy equity. These 'green' assets contribute positively to the alignment of an asset owner's portfolio related to the contribution to a 2°C economy and the portfolio's compatibility with climate and energy transition targets.

Q What do you think about portfolio carbon foot-printing?

On demand and subject to portfolio complexity and fee arrangement, AllianzGI can deliver portfolio climate risk reports including carbon footprint reports. AllianzGI asks institutional investors to be aware of the limits and usefulness of portfolio carbon foot-printing as a tool to measure portfolio climate risk exposure. Corporate issuer related GHG data may be subject to inconsistencies and not 100% reliable due to disclosure and measurement limits. Depending on the investment universe the portfolio's data coverage may be low. Overall the approach is backward-looking and does not capture the various shades of climate change risk (see section on 'How does AllianzGI define climate change risk?). In particular, carbon risk reports do not highlight the capability to transform to a 2°C economy – there are huge differences between and within industry sectors and corporates. Generally, we think portfolio carbon foot-printing provides some useful insights. It should be seen a starting point, especially if measured against benchmark carbon exposure, but is not sufficient to fully conclude investment signals in a meaningful forward looking way.

Q What is your view on climate risk triggered corporate exclusions?

Exclusions may be perceived to deliver an immediate portfolio climate risk exposure reduction. There are important caveats to be considered though. There are only a small number of corporates whose business is built on pure play fossil energy or mining, for example some Chinese coal corporates. There are many grey areas. For example most utilities are active in traditional and renewable energies.

Through exclusions, stock may just change hands – there is no societal impact i.e.no contribution to the transformation to a low carbon 2 degree economy. And companies may be willing and able to change their business models and products – exclusions would cut customers short of these possible investment opportunities. Divesting may imply the risk of selling 'at low', immediately locking in losses and forfeiting mean reversion. Depending on size of exclusions portfolio tracking error and hidden, unwanted portfolio exposure are all important considerations.

In summary, we think portfolio exclusions have important shortfalls compared to other instruments such as engagement at the regulatory and corporate levels or proxy voting related to climate risk. Active stewardship including material climate risk issues is an essential part of AllianzGI's ESG policy. Exclusions may be considered if corporate engagement has failed to deliver results.

Q

What do you think of low carbon indices?

We think climate risks are too complex to be wrapped into a rule based, passive index strategy. We are convinced that active asset management that takes account of corporate climate risks and opportunities in a holistic educated and differentiated way, driven by fundamental analysis, delivers better investment performance results. By assessing climate risk on simple metrics such as carbon intensity, carbon reserves on the balance sheet or exposure to green technologies, in our view, one does not get a clear understanding of the underlying risks/opportunities posed by a transition towards a low carbon economy. Many variables will affect this risk/reward profile, depending on the aspects such as regional footprint, commodity exposures, strategic focus and adaptive capacity. All of these factors lend themselves to fundamental analysis, which may or may not include analysis of metrics such as carbon intensity.

Q

What is the view of Allianz SE on climate risk?

AllianzGI's shareholder, Allianz SE, considers climate risk key for Allianz. For a number of years Allianz SE has taken steps related to climate change risks including a build-up of a large renewable energy portfolio.
For further details on the view of Allianz SE on climate risk please refer to Allianz Sustainability > Specials: Climate Change.

Contact for matters relating to the Allianz Global Investors Climate Risk Investment Positioning:

Dr. Steffen Hoerter
Global Head of ESG
Tel: +49 (0)89 1220 7704
Email: steffen.hoerter@allianzgi.com

Allianz Global Investors GmbH
Seidlstrasse 24-24a
80335 Munich
Germany

www.allianzgi.com

Notes
ESG: Environmental, Social and Governance.

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Allianz Global Investors GmbH
Seidlstrasse 24-24a
80335 Munich
Germany

www. allianzgi.com

17-1242 | March 2017