

Securing a sustainable business model in a net-zero carbon world...

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Richard is a climate physicist by training and is interested in how the insights from the latest climate science can be successfully embedded in effective climate policy. His research spans the physical and economic consequences of climate policy and investigates pathways for achieving global climate goals. He was recently involved in a high-profile paper in *Nature Geoscience* that suggested the [1.5°C goal might not be quite out of reach just yet](#).



Over recent weeks, the impact of extreme weather has been hard to miss. A sequence of large and powerful hurricanes tracked their way through the Caribbean and the South-Western states of the USA, creating a trail of destruction in their wake. Understandably, many want answers to what, if anything, human created climate change contributed to these storms... Attributing the contribution of climate change to individual weather events (and particularly hurricanes) can only be done probabilistically. However, as a warmer atmosphere holds more water vapour, increases in particularly heavy rainfall events are likely to increase in a warmer world. Combined with human contributions to observed sea-level rise, which amplifies flooding during storm surges, it is clear that human impact on extreme weather is here today and will be here to stay in the future.

The impact of changing extreme weather patterns creates risks to supply chains and business models across the economy. From agriculture and energy, through to tourism and insurance, understanding and managing physical risks from current and future climate change will become ever more vital to maintaining profitable and sustainable businesses in a changing world. However, despite their continued importance, physical climate risks are not the full extent to which climate change poses an on-going challenge to companies.

In December 2015, governments around the world committed to holding the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels. This is a profound challenge. To stop global warming at any level, be it 1.5°C, 2°C or higher, emissions of carbon dioxide must be reduced to net-zero across the globe. For the goals of the Paris Agreement this must be achieved before human-driven warming crosses these thresholds, which will likely require net-zero emissions around mid-century. Despite the scale of the challenge, governments have already begun to act with a view to meeting these goals, with policy action likely to be substantially ramped up in coming years.

For the private sector, particularly for those companies that operate long-lifetime carbon intensive assets, planning for a net-zero future needs to begin now. The emissions “locked-in” to existing power plants, internal combustion engines and urban infrastructure may well be sufficiently large to use up all of the remaining “carbon budget” (the total amount of carbon that we can emit over all time) for the 1.5°C and 2°C targets if these assets continue emitting until the end of their natural economic lifetimes. Without retrofitting carbon capture technologies to these assets, or the development of technologies that could mop emissions back out of the atmosphere, there is a real risk of existing economic assets becoming “stranded” if governments get serious about the commitments they made in Paris.

Clear leadership from company boards, as well as informed investor pressure, will be essential parts of planning for a smooth transition to a net-zero economy. Investors should be pushing their boards to set targets for reaching net-zero emissions from their business activities. If companies claim to support the goals of the Paris Agreement they should be publicly acknowledging the need to reduce their carbon dioxide emissions, including from the use of their products, to zero before human-driven warming reaches the Paris Agreement thresholds. Clear planning of how businesses might continue to be profitable in a net-zero emissions world, as well as measureable goals on the path to getting there, should be clear asks from investors interested in maximising the sustainability of their portfolio.

For carbon intensive sectors, such as fossil energy or industry, this forward-looking planning might require some tough choices. Technology development, particularly for activities that typically have high fixed costs, can be a long process. It is for exactly this reason that a clear roadmap of a company’s planned route to net-zero emissions is necessary today. As carbon dioxide emissions must fall to zero to stop warming, and given that it seems unlikely that we are going to find economically viable alternatives to all uses of carbon in the economy any time soon, it may well turn out that the foresightedness of executives and investors will be a crucial determiner of how fast the world can stop warming.

At P1 Investment Management, we believe that ethical investing matters. Humanity needs to harness the power of companies to end harmful behaviours and to tackle challenges, which may relate to the environment, climate change and social issues. Investment via financial markets can help support and control companies’ behaviour by rewarding those companies that are working to address problems and reducing access to share capital or bond financing for others with unethical or unsustainable practices.

