**Markets pricing the costs of climate change risks is not an end in itself.**

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The Intergovernmental Panel on Climate Change (IPCC) produces an Assessment Report (AR) that consists of three Working Group (WG) Reports and a Synthesis Report. The AR provides an update of knowledge on the [scientific](https://en.wikipedia.org/wiki/Scientific_opinion_on_climate_change), technical and [socio-economic](https://en.wikipedia.org/wiki/Economics_of_global_warming) aspects of [climate change](https://en.wikipedia.org/wiki/Global_warming).

The fifth publication of the AR, AR5, was published from 2013 through 2014 and it revealed certain highly important developments as regards climate change, and climate change adaptation and mitigation. The AR6 is presently in the works, but the revelations of the AR5 are still relevant.

In 2013, through these reports, the IPCC showed that:

* Climate change is here, man-made, and already having dangerous impacts across all continents and the ocean;
* Global warming can still be kept below the politically agreed limit of 2 degrees Celsius compared to preindustrial levels;
* Securing a safe climate future is possible and economically viable if immediate action taken.

The report certainly did not shock the market then. [Disclosures to CDP](https://www.cdproject.net/en-US/Pages/HomePage.aspx) show that 84% of the world's largest companies already see the risks that climate change regulation presents to their business, while 83% identify risks as a result of a changing climate. Such risks include regulation that may strand assets which become unprofitable due to carbon restrictions or business disruption as extreme weather becomes more frequent and severe.

**Primarily the report reaffirmed the need for action to reduce emissions and build resilience. The challenge since then has been for investors, companies, and governments to rapidly increase the pace and scale of this change.** There has been a substantial acceleration in policy, spurring governments and corporations to speed up the progress towards **low global warming transition pathways.**

At the 21st session of the Conference of Parties (COP 21), parties to the UNFCCC reached a landmark agreement to combat climate change and to accelerate and intensify the actions and investments needed for a sustainable low carbon future through the Paris Agreement. Its central aim is to strengthen the global response to the threat of climate change. This will be achieved by keeping global temperature rise in this century well below 2 degrees Celsius above pre-industrial levels. The agreement was to also facilitate efforts to limit the temperature increase even further to 1.5 degrees Celsius.

Stricter environmental policies, carbon taxes, and affordable energy substitutes are crucial for climate risk mitigation. For example, a carbon pricing scheme helped the United Kingdom reduce its dependence on coal by 12.4 percentage points from 2013 to 2018. In Spain, government subsidies favoring renewable electricity generation helped reduce coal dependence between 2005 and 2010—even though that reduction was in part driven by temporary factors. In the United States, a more modest decline was driven by market forces as the shale gas revolution pushed down natural gas prices.

For its [2017 update](http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2017/04/Global-trends-in-climate-change-legislation-and-litigation-WEB.pdf), the sixth edition published since 2010, the Climate Change Law Database now covers 164 countries, up from 99 in 2015. This increase primarily reflects efforts to expand the scope of the database, rather than an increase in the number of countries passing climate change laws.  
Nevertheless, the number of climate laws continues to grow rapidly.

Fig-(1)

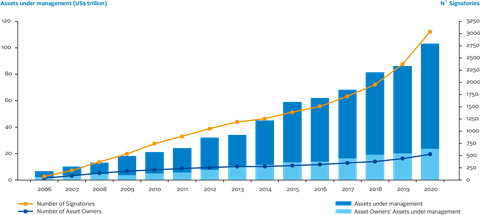
Chart

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*Source: Carbon Brief*

Climate change and responsible investing are getting more and more attention from investors. The power of capital markets to drive towards climate change and sustainability pathways has been increasing tremendously over the past decade. The Principles for Responsible Investing (PRI) continues to see strong growth. In 2019/20 they welcomed 665 new signatories, including 86 new asset owners. This 28% growth rate is the highest increase the PRI ever had, up from 22% last year, showcasing that responsible investment is on the move. As of March 31, 2020, the PRI had 3,038 signatories representing over USD $103 trillion AUM.

Fig-(2)



*Reference:* [*https://www.unpri.org/pri/about-the-pri*](https://www.unpri.org/pri/about-the-pri)

With pressures from investors and as a result of strong climate engagements, over 9,600 companies, together worth more than half of global market capitalization, disclosed their environmental data to CDP this year, marking a 14 percent increase over 2019 and a 70 percent jump since 2015 when the Paris Agreement was first brokered.

Fig – (3)

Chart, bar chart

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*Reference: https://www.cdp.net/en/companies/companies-scores*

As the world marks the fifth anniversary of the adoption of the landmark Paris Agreement on climate change, a promising movement for carbon neutrality is taking shape. By Jan 2021, countries representing more than 65 percent of harmful greenhouse gasses and more than 70 percent of the world economy will have committed to achieve net zero emissions by the middle of the century.

The European Union has committed to do so. The United Kingdom, Japan, the Republic of Korea and more than 110 countries have done the same. So, too, has the incoming United States administration. China has pledged to get there before 2060. The new US presidency has promised to sign executive orders on his first day in office that “put us on the right track” toward net-zero emissions by 2050 and a 100 percent clean energy economy, though what those orders will say exactly is unclear.

With this realization and response of policy makers, investors and corporations after the awakening by the Fifth Assessment Report (AR5), we do observe that markets are getting better in pricing climate change transitions. Although the market is getting better at determining these costs, there is much left to do in utilizing this information. Recognizing the high risks and cost of climate change risks and mitigation risks, asset owners and managers have began attempting to translate this into various asset management strategies. Many have subscribed to the exclusionary strategy which is not surprising considering it is a low hanging fruit. Admittedly, this is a viable strategy, but it only goes so far as serving as a “punitive” hand to penalize carbon dense industries. It does little by way of incentivizing the market, including the carbon dense industries to make moves to amend their processes to be more sustainable. Subscribing to a wholly exclusionary strategy through divestment potentially encourages posturing by firms to secure investment. Additionally, the suddenness that comes with divestment as a strategy if not matched with an equal swiftness in investment in the substitute industries could be macroeconomically disastrous as there is a lot of reliance on these carbons dense industries.

In using the information from the pricing of climate risk to design investment strategies, the market should look into optimization of portfolios, all industries inclusive. The Entelligent E-Score facilitates this optimization process and blends in seamlessly to any bespoke sustainability strategy may adopt. This is very evident when we integrate climate transition risk scores by Entelligent for screening 25%, 50% and 75% of companies and matching the benchmark’s S&P 500 weighting methodology. We do observe relative to the benchmark the portfolio of most climate fit companies significantly out-performs the market benchmark.

Fig –(4)

Chart, line chart, histogram

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*Data Source: Entelligent Smart Climate*

P25, p50, p75 active return vs SPTR. P25 holds 25% of the most climate fit companies, P50 holds 50% of the climate fit companies and p75 holds 75% of the climate fit companies within GICS economic sectors of the benchmark. The climate fitness is measured using Entelligent’s E-Scores. The performance is measured relative to S&P 500 market index.

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