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## 2020: The Climate Decade

As the last major market inefficiency, we believe that climate change will become a defining investment issue in the next decade. For evidentiary purposes we will discuss three trends: declining low carbon technology costs, shifting public perception, and rising climate costs. Each of these trends we believe have reached tipping points at the start of 2020. Increasingly, we are not alone in our assessment.

Larry Fink, CEO of Blackrock, one of the world's largest investors, focused almost exclusively on climate change in his 2020 letter to CEOs. In this letter, he emphasized that "climate change has become a defining factor in companies' long-term prospects... a risk that markets to date have been slower to reflect. **But awareness is rapidly changing, and I believe we are on the edge of a fundamental reshaping of finance.**" This is a bold statement from one of the world's most respected asset managers. **This follows the CEO of Goldman Sachs announcing a \$750 billion commitment to fighting climate change, stating a "powerful business and investing case."**

There is, unfortunately, reason to be skeptical. Rational actors would have acted on climate change evidence long ago, but capital markets continue to largely ignore the economic consequences, let alone the moral implications. So why are Larry Fink and other's writing about climate change now? To answer that, let's review the progress from the last decade.

In the 2010s, climate scientists' warnings about the prospective damage caused by emitting greenhouse gases into our atmosphere became increasingly urgent. However, those warnings and the subsequent observable warming that was predicted by scientists did not result in sufficient action from governments and businesses. Global CO<sub>2</sub> emissions are not tracking with a target warming of 1.5C degrees (or 2C degrees for that matter). In fact, after a brief pause between 2014-2016, annual global emissions have started to increase YOY again. 2019, the second hottest year on record, will see an approximately .6% increase in global emissions. Greenhouse gas emissions now need to decline even faster to avoid the harshest scenarios. Each year of adding carbon emissions not only eliminates a potential year of progress but also uses critical parts of the remaining carbon budget, making the necessary reduction curve and capital reallocation that much more dramatic. In the 2020s, to stay below the 1.5C degree warming target, we now need to decrease global emissions by 55% and by 25% to stay below 2C degrees.<sup>1</sup>

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<sup>1</sup> <https://www.scientificamerican.com/article/co2-emissions-will-break-another-record-in-2019/>

The delay in action, while frustrating, should not be mistaken for no progress. In fact, we see three emerging trends that may answer why Blackrock and others are starting to see climate as an urgent investment issue. First, technological advancement and declining renewable energy costs have made them economically advantageous alternatives to fossil fuels. Second, political sentiment about climate change has shifted meaningfully in the last decade, reflecting raised awareness and a higher probability of legislative action. Third, the current costs of climate change are starting to be priced by the capital markets. These trends have set up a tipping point that we believe will be reflected in public market valuations sooner than many think. Importantly, these long-term climate themes are expressed in Redwood Grove Capital's portfolio.

## Technology

During the last 10 years, technology has significantly reduced the price of alternative energy. This is accelerating the transition to a low carbon economy. Electric vehicles and smart interconnected cities are still a few years away. **But utility scale solar and wind are now cheaper to build than traditional sources of energy, and have become the market's preferred source of new electricity.**

The unsubsidized levelized cost of electricity (LCOE) from renewable energy dropped below that of fossil fuel over the last two years. In 2020, the US Energy Information Agency (EIA) expects Wind and Solar to account for 76% of new electricity generation and Natural Gas to be 22%, with all other fuel types fighting over that last 2%.<sup>2</sup> Compare that to two years ago when natural gas was 67% of all new electricity construction. And no one is building a coal plant, the once dominant source of electrical power in the United States.<sup>3</sup>

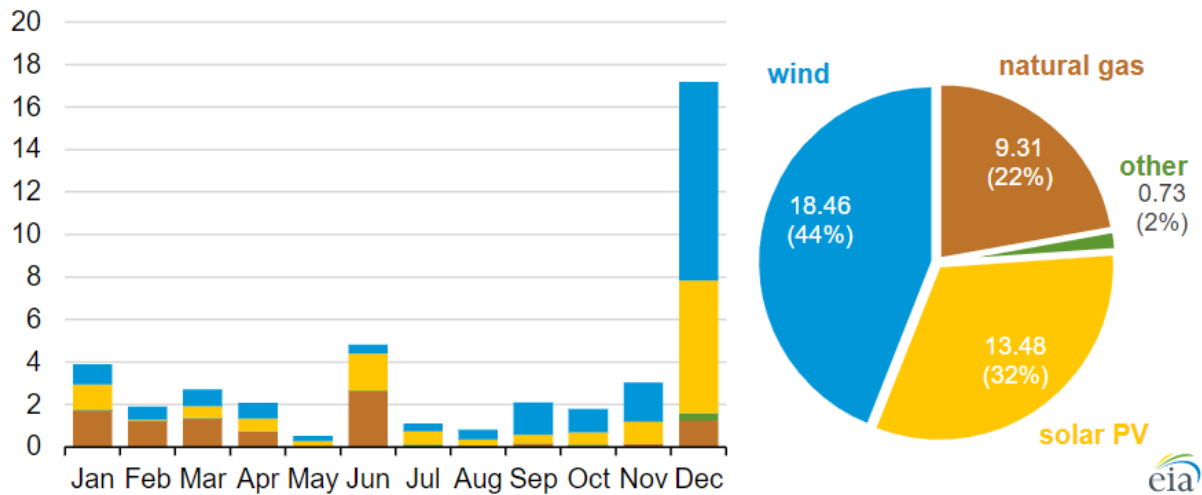
Despite this, the transition to cheaper and cleaner sources of fuel has been incremental, as new supply comes primarily to replace retired fossil fuel energy sources. However, a second potentially more important price inflection (I googled it, and it appears that inflexion is the British spelling) point is near as the low-end cost of solar and wind are now below the cost of running an existing coal or nuclear plant. As these sources of electricity prices continue to see declining prices, the market will accelerate the pace of replacement, retiring plants prior to their end of life to capture renewable energy's cost savings. Yieldcos like Clearway Energy, TerraForm Power and Pattern Energy, which provide financing for renewable energy projects and have been found in our portfolio, will continue to benefit from the growing pipeline of new renewable projects. In the past few months, larger industrial asset managers including Brookfield Asset Management and the Canadian Public Pension Investment Board, presumably aware of this trend, have acquired TerraForm Power and Pattern Energy.

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<sup>2</sup>[https://www.eia.gov/todayinenergy/detail.php?id=42495&src=email&utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=newsletter\\_axiosgenerate&stream=top](https://www.eia.gov/todayinenergy/detail.php?id=42495&src=email&utm_source=newsletter&utm_medium=email&utm_campaign=newsletter_axiosgenerate&stream=top)

<sup>3</sup>[https://www.publicpower.org/system/files/documents/67-America%27s%20Electricity%20Generation%20Capacity%202019\\_final2.pdf](https://www.publicpower.org/system/files/documents/67-America%27s%20Electricity%20Generation%20Capacity%202019_final2.pdf)

**Planned U.S. electric generating capacity additions (2020)**  
gigawatts (GW)



Source: U.S. Energy Information Administration, *Preliminary Monthly Electric Generator Inventory*

**Public Perception**

In the first Lincoln-Douglas debate, Abraham Lincoln brushed aside Douglas’s concern about the Supreme Court’s potential to nationalize slavery, saying **“in this country, public sentiment is everything. With it, nothing can fail; against it, nothing can succeed. Whoever molds public sentiment goes deeper than he who enacts statutes, or pronounces judicial decisions.”** Today, our Federal government may be responding to climate change too slowly, if at all, but attitudes about climate change have shifted meaningfully over the past decade. According to the Pew Research Center, in 2009, only 36% of Americans believed that climate change was happening due to human-caused emissions.<sup>4</sup> A decade later 79% believe it is caused by human activities.

This awareness of climate change can be seen in policy priorities as well. In 2009, climate change ranked 20th out of 20 voter priorities. Today, it ranks fifth, and is the top priority for 14% of Americans.<sup>5</sup> It appears increasingly likely that we will see a Federal price on carbon or an increase in climate related legislation this decade. Some corporate leaders, such as our holding Disney, have management teams that already use an internal price on carbon in capital deployment decision. A regulatory change that raises the price of carbon will provide a competitive advantage to Disney and other corporate leaders embracing a low carbon economy.

**Costs of Climate Change**

The current costs of climate change are increasingly being felt, and the market is just beginning to account for them. The First Street Foundation, for example, has quantified the economic impact of climate change on real estate prices. Their peer reviewed study found that Miami Dade county lost \$465 million of real estate value due to the threat of rising sea levels from 2005 to 2016. They expanded the study last year and completed an analysis of eight coastal states which included 9.2 million real estate

<sup>4</sup> <https://www.people-press.org/2009/01/22/economy-jobs-trump-all-other-policy-priorities-in-2009/>

<sup>5</sup> <https://www.pewresearch.org/science/2019/11/25/u-s-public-views-on-climate-and-energy/>

transactions. They concluded that \$14.1 billion of home value was lost as buyers became increasingly concerned with the risk of rising seas. This decline in market value makes economic sense. McKinsey has estimated that by 2050, \$30-\$80 billion of real estate value in Florida will be lost from flood damage alone.<sup>6</sup> According to Dr. Jeremy Porter, the head data analyst on the First Street project, “the results have been incredibly consistent... all signs are pointing to this being an accelerating trend.” But lost real estate value is just one of the costs of climate change.

It is still conventional wisdom that climate’s impacts and market prices will move in a steady and linear fashion. But the evidence shows we are likely creating numerous “green swans” or Minsky moments where the market will rapidly reprice assets. The devastating fires in Australia (18mm acres burned) makes clear that the costs of climate change may explode catastrophically rather than increase in a slow and linear fashion. This non-linear impact is particularly true as systems hit threshold limits. McKinsey points out this risk in their recent report “Climate Risk and Response.” As climate’s impacts (heat, sea levels etc) on social economic systems hit certain forecasted levels, systemic catastrophic failures reach material levels of probability.<sup>7</sup> We believe the public equity markets will soon be forced to start pricing these first and even second order effects into company valuations.

Organizations as staid as the Federal Reserve have begun to talk about the economic impact of these events on our overall economy. Just this last quarter, on November 8<sup>th</sup>, Mary Daly, the CEO of the San Francisco Federal Reserve Bank, said these increased economic risks from severe weather represented a systemic risk for which the Fed must be prepared. In her remarks, Ms. Daly said “Higher sea levels, heavier rainfalls, drier conditions, and the associated fallout can cause catastrophic losses to property and casualty insurers...And the impact goes well beyond insurers. This impacts banks’ customers, making it harder for them to satisfy their loan obligations. And this can ultimately stress banks’ balance sheets. So ensuring financial institutions are regularly evaluating their exposure to climate-related risks is an increasingly important part of our work. Early research suggests that increased warming has already started to reduce average output growth in the United States. And future growth may be curtailed even further as temperatures rise. Several of the papers... outline other ways in which the micro- and macro-economic environments may be impacted by climate change. When you put all these pieces together, it becomes pretty clear: **climate change is an economic issue we can’t afford to ignore.**”<sup>8</sup>

Despite these repeated warnings, we believe the public equity markets and most asset managers are not incorporating a climate analysis into their investment process. By contrast, Redwood Grove’s investment process and portfolio accounts for these forecasts, by incorporating the work of academic and scientific sources.

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<sup>6</sup><https://www.mckinsey.com/~media/McKinsey/Business%20Functions/Sustainability/Our%20Insights/Climate%20Risk%20and%20Response%20Physical%20Hazards%20and%20Socioeconomic%20Impacts/MGI-Climate-risk-and-response-vF.ashx>

<sup>7</sup><https://www.mckinsey.com/~media/McKinsey/Business%20Functions/Sustainability/Our%20Insights/Climate%20Risk%20and%20Response%20Physical%20Hazards%20and%20Socioeconomic%20Impacts/MGI-Climate-risk-and-response-vF.ashx>

<sup>8</sup> [https://www.frbsf.org/our-district/press/presidents-speeches/mary-c-daly/2019/november/why-climate-change-matters-to-us/?utm\\_source=sharebutton&utm\\_medium=frbsf&utm\\_campaign=twitter](https://www.frbsf.org/our-district/press/presidents-speeches/mary-c-daly/2019/november/why-climate-change-matters-to-us/?utm_source=sharebutton&utm_medium=frbsf&utm_campaign=twitter)

## Value Investing in 2020

Recently, it has been in vogue for financial periodicals to write articles questioning if value investing works any more. These articles typically cite the decade-long monetary easing as well as disruptive trends created by companies like Amazon as reasons for Value to underperform. In addition, some industries are so dramatically upended by new asset lite business models that they are seen as being in irreversible secular declines. But before discarding Value investing all together, it's worth looking at this in historical context. The 2010s saw Growth stocks comfortably outperform Value stocks. From 2010 to the end of 2019, Growth stocks' (as measured by the Russell 1000 Growth Index) annualized return was 15.22%, outperforming Value stocks' annualized return of 11.80% (as measured by the Russell 1000 Value Index) by 3.42%. First, Value's 11.80% annualized return over the past decade is about 300 bps better than its long-term average return. Growth's 15.22% return is a 760 bps improvement from its long-term average. In other words, Value outperformed historical equity returns in the 2010s, just not by as much as Growth.

By just going back one decade, from 2000 to 2010, Value outperformed Growth (2.47% annualized versus -3.99% annualized). When looking at those past two decades combined (2000-2019) Value has outperformed Growth (7.03% annualized versus 5.18% annualized). While this last decade-long period of under-performance for Value is not desirable, it should not be used as evidence of a paradigm shift marking an end to Value investing. Go back one more decade, to the 1990s, to see how dramatically outperformance can shift between strategies. In March of 2000, Growth had outperformed Value on a 1-, 3-, 5- and 15-year basis. Just one year later, Value was outperforming on all four time periods. Today, not unlike in 2000, Value sells at a large discount to Growth. We believe this will set us up well in the years ahead.

### Redwood Grove's Value Portfolio

While each holding in our portfolio has its own unique investment thesis, we find it illustrative to look at our portfolio averages. As a whole, they reflect our overall approach to investing. At Redwood Grove, we look for companies with attractive long-term growth prospects but are currently undervalued relative to its prospects, peers and history due to short-term cyclical or idiosyncratic challenges. Our climate change lens is critical in this regard as it helps us identify unpriced trends and orients the investment thesis toward the long term (3-5 years).

In Chart 2, you can see that our portfolio is invested in companies with below-market valuations on average. Collectively, these companies are valued at a discount to their peers and their own historical valuations but with greater expected growth in revenue, EPS and EBITDA than the overall market. On average, our portfolio's price to earnings ratio is 14x versus the S&P 500's 18x and the Russell 1000's 18.5x. This represents a discount of approximately 25%. The average enterprise value to EBITDA is 9.0x compared to the market at 12x is 25% cheaper than the S&P 500. Importantly, to us, the portfolio has 60% higher Free Cash Flow yield than the market.

	5 year avg LTM			5 year avg			5 year avg LTM			CY20	CY20	CY20
	NTM PE	LTM PE	PE	NTM EV/EBITDA	LTM EV/EBITDA	LTM EV/EBITDA	NTM FCF Yield (%)	LTM FCF Yield (%)	FCF Yield	Revenue Growth (%)	EPS Growth (%)	EBITDA Growth (%)
Redwood Grove	14.2x	17.9x	23.2x	9.0x	11.8x	10.2x	7.7	4.6	6.0	7.4	14.2	9.1
S&P 500	18.2x	21.1x	19.0x	12.3x	14.0x	12.4x	4.8	4.5	5.1	5.2	9.5	7.7
iShares Russell 1000 ETF	18.5x	21.2x	18.8x	12.5x	14.4x	12.4x	4.6	4.4	4.9	5.0	10.6	8.0
iShares Russell 2000 ETF	23.5x	18.6x	18.7x	11.4x	14.1x	13.8x	4.0	2.2	2.4	4.1	36.6	8.7

Redwood Grove Chart 2

Portfolio averages, of course, only tell part of the story. In addition to single-name analysis, we also think about portfolio factor risks. Our largest factor risk, no exposure to energy, is by design. That stands in stark contrast to Energy's 8.22%<sup>9</sup> in the Russell 1000 Value Index and 4.34%<sup>10</sup> in the S&P 500 Index. Energy's 11.5% return in 2019 lagged every other sector by more than 10%<sup>11</sup>, and our returns in 2019 have benefitted from this positioning. However, energy stocks had the strongest sector return in December 2019, and we are mindful that this trend could continue into 2020 and hurt our relative returns. Recent geopolitical tensions have caused oil prices to trend upwards in the short term. Despite the market's recent enthusiasm for Energy, we remember Chevron's and Shell's recent impairment charges, of \$10b and \$2b respectively, due to declining probabilities that their natural gas reserves will be utilized. (Remember the decline in new natural gas-powered electrical plants discussed earlier in this letter.) These follow Repsol's \$5b charge in December 2019 as well as BP's \$2.6b write-off in October 2019.

As we consider the risk to our portfolio's relative returns due to our Energy positioning, we remain convinced that the urgency to transition to a low-carbon economy is undiminished. While short-term pressures and worries to keep the world's machineries running using oil and gas may mean that the recent rise in oil prices and Energy is justified, we think that the reality is that oil and gas supplies are in a state of abundance over the long term. We remain wary of the prospects of these companies particularly since these same companies have been financing their share repurchases and dividend payments over the past ten years through increased debt loads as pointed out recently by the Institute for Energy Economics and Finance.

As a result, we think that the portfolio positioning with regards to Energy is both beneficial to us and economically rational over the long-term. To offset potential short-term challenges to portfolio returns caused by our Energy positioning, our portfolio includes stocks such as Ameresco, Hexcel, United Rentals and Willdan. These companies have business models that have shown to improve with higher energy prices and are correlated to both increased business activity and higher prices for fossil fuels. Thus, the fund is indirectly exposed to energy prices despite our conviction that a transition away from fossil fuels is imperative. Importantly, unlike fossil fuel companies, our investments should benefit from a tax or price on carbon as well as an accelerated transition to a low carbon economy.

<sup>9</sup> <https://www.ishares.com/us/products/239708/ishares-russell-1000-value-etf>

<sup>10</sup> <https://www.ishares.com/us/products/239726/ishares-core-sp-500-etf>

<sup>11</sup> [https://www.lazardassetmanagement.com/docs/-p99-/654/Lazard\\_MonthlyFactorReport-Global\\_201908\\_en.pdf](https://www.lazardassetmanagement.com/docs/-p99-/654/Lazard_MonthlyFactorReport-Global_201908_en.pdf)

## Closing thoughts

Since 2016, Redwood Grove's partners have discussed the importance of incorporating climate science into traditional investment models. We believe that climate change represents the last major market inefficiency and potential for sustainable outperformance. We agree with Larry Fink's recent comments that "sustainability- and climate-integrated portfolios can provide better risk-adjusted returns to investors. And with the impact of sustainability on investment returns increasing... sustainable investing is the strongest foundation for client portfolios going forward." But we disagree with his and others' passive approach. Instead, we rely on off-Wall Street scientific resources and our proprietary research to understand companies' economic positioning relative to the forecasted events of climate change.

We look forward to our future of investing in this new era of climate change. Over the coming decade, we hope to continue to reward our investors by investing in sustainable companies that provide solutions and leadership for our planet, as well as by outperformance.

Best,

The image shows two handwritten signatures in black ink. The first signature, on the left, is written in a cursive style and reads "Red". The second signature, on the right, is also in cursive and reads "Greg".