

CHIEF INVESTMENT OFFICE

Impactonomics®

Sustainable Investing Under the New Administration

April 2021

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The “E” in ESG

Public concern about environmental risk has undoubtedly grown, and with it regulation, leaving investors wondering about its impact on their investment decisions in the way of both return expectations and risk factors. The response: Climate change will likely become a more central feature of corporate decision-making in the years ahead and should remain at the forefront of environmental, social and governance (ESG) investment strategies and considerations. Similarly, addressing climate risk and energy needs looms large as a challenge for the Biden administration.

As the flow of capital continues into sustainable investment strategies, solutions have matured, and sustainable investing with environmentally oriented objectives has evolved. Historically, two of the most common approaches have been exclusionary screening of carbon extraction companies and purchasing the common stock of solar panel or wind turbine manufacturers, whether in public equity or venture capital markets. Today, the opportunity set has widened to include a broader range of investment options. Technological advancements, public policy, and corporate and investor preferences have combined to provide institutional and retail investors with a greater menu of environmentally oriented investment approaches from which to select—and these investments span a range of risk and return profiles across the maturing ecosystem supporting the energy transition.

The “E” Through an Economic Lens

The macroeconomic imperative to address climate change starts by acknowledging the growing risk of more extreme exogenous shocks to the global economy with impacts on physical infrastructure, labor productivity and financial stability. Long-term growth forecasts are at risk. Work by the Group of Thirty (G30)¹ concluded that if the world continues on its current path, temperatures will rise by over 3 degrees Celsius (°C) above preindustrial levels by 2100, reducing world gross domestic product (GDP) by up to 25% due to these impacts.² As policymakers across the globe work to address the growing concern at a high level, long-term capital market assumptions (both returns and volatility) will likely need to be revisited.

¹ Led by former central bankers Mark Carney, Janet Yellen and Philipp Hildrebrand, The Group of Thirty, often abbreviated to G30, is an international body of financiers and academics which aims to deepen understanding of economic and financial issues and to examine consequences of decisions made in the public and private sectors.

² Mainstreaming The Transition To A Net-Zero Economy, G30, October 2020.

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Planet

Contributions to climate and environmental sustainability



INVESTMENT IMPLICATIONS:

We believe investors who embrace sustainable investing practices will be better able to position their portfolios for potential long-term success.

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Investors focusing on country selection for equity, sovereign bond or currency investments should consider incorporating analysis of climate vulnerabilities and readiness. Rising temperatures and changing weather patterns has led to drought, food shortages, resource competition and ultimately migration (with impacts on migration which has effects on neighboring countries that may lead to sovereign risk). Country-level indicators such as the University of Notre Dame Global Adaptation Index (ND-GAIN) initiative and others can try to help rank sovereign vulnerabilities and readiness to address climate change. Financial markets tend to price in uncertainty with volatility, making that “readiness” a key input to assessing potential climate-related volatility across asset classes.

In the near term, for investors there is a headline macro risk associated with the policy push toward more regulation and higher taxes to help pay for critical climate infrastructures. And there may be opportunities from the short-term investments. The Biden administration released its initial plan to invest through the March 2021 “American Jobs Plan” with around three-quarters of a trillion dollars allocated toward “green” initiatives (Exhibit 1).

Exhibit 1: Breakdown of “Green” Investments in Biden’s Proposed “American Jobs Plan,” in billions USD.

Investment in electric vehicles and related infrastructure	\$174
Reenergize America’s power infrastructure	\$100
Build, preserve, and retrofit more than two million homes	\$213
Modernize nation’s schools and early learning facilities	
Modernize public schools	\$100
Invest in community college infrastructure	\$12
Upgrade child care facilities and build new supply in high need areas	\$25
Upgrade Veterans Affairs hospitals and federal buildings	\$28
Establish the U.S. as a leader in climate science, innovation and research and development (e.g., Advanced Research Projects Agency for Climate, utility-scale energy storage, carbon capture and storage, hydrogen, advanced nuclear, rare earth element separations, floating offshore wind, biofuel/bio products, quantum computing and electric vehicles)	\$35
Jumpstart clean energy manufacturing through federal procurement (e.g., electric vehicles, charging ports, and heat pumps)	\$46
TOTAL “GREEN” SPENDING	\$733
TOTAL AMERICAN JOBS PLAN	\$2,278

Source: whitehouse.gov Fact Sheet: The American Jobs Plan as of April 12,2021.

Globally, there is a concerted policy effort to help address a common threat, including the 122 countries that have committed to net-zero emissions in the coming years, according to the United Nations (UN). Economic growth forecasters will likely balance the short-term costs to create long-term benefits in the form of higher potential growth. Those who manage money should consider doing the same by balancing tactical risks with long-term strategic benefits.

The “E” Through a Corporate Lens

No longer tangential to the economic equation, environmental risks and opportunities are considered in corporations regular course of business. And not surprisingly—given their impact on both revenue and costs—and increasingly the cost of capital, companies are currently investing in the “E” from the bottom up. Strong ESG propositions may relate to higher financial returns and lower downside risks.³

NET-ZERO EMISSIONS

According to the Science Based Target initiative (SBTi), Net Zero emissions are achieved when emissions of greenhouse gases to the atmosphere are balanced by removals over a specified period.

³ McKinsey: Five ways that ESG creates value, November 14, 2019.

Considerations for Companies:

- 79% of consumers are changing purchase preference based on the social responsibility, inclusiveness or environmental impact of their purchases.⁴
- 70% of surveyed consumers would pay a 5% premium on a green product of the same standard over a non-green alternative.⁴
- A strong environmental proposition may be a differentiator, allowing corporations to enter new markets or create new verticals within existing ones, as well as to identify new needs for supply chains or streamline opportunities in an effort to reduce emissions.
- Companies may find it easier to attract, retain and motivate talent when their purpose resonates with existing and potential employees.
- Reducing resource costs—such as the true cost of water, carbon, raw materials—has the potential to improve operating profits by up to 60%.⁵
- One-third of corporate profits are at risk from state intervention.⁶ Executing an effective environmental proposition, as well as providing greater visibility via ESG metrics and disclosures, can help mitigate the chances of regulatory and government pressure, as well as reputational risks.
- Providing visibility into ESG metrics⁷ and embracing sustainable business practices on material issues may also lead to a lower cost of capital relative to peers.⁸

Investment Themes and Needs

As the scale of the impending environmental crisis has come into clearer focus, the universe of viable climate-related investments has expanded. Green bonds, a widely publicized segment of climate finance, are one such example of a climate-related asset class that has grown rapidly, reaching \$266.5 billion of annual issuance in 2019 and \$269.5 billion in 2020, according to Climate Bonds Initiative. In the renewable energy space, financing for large-scale solar and wind projects reached \$47 billion in 2019 according to BloombergNEF. The imperative to decarbonize virtually all sectors of the economy has further extended the investment universe to include transportation, shipping, agriculture, cement, heating and more. Although many of these opportunities remain the province of private capital for the time being, technological innovation, the scaling of capacity, and public policy are increasingly pushing climate financing into public markets.

In many cases, we believe the driving force today behind capital flows into certain climate-oriented sectors is economics. Renewable energies offer perhaps the starkest example. During the period between 2009 and 2019, solar energy costs fell by 90%, while utility-scale wind energy costs declined by 71%, making these renewable sources of power cost-competitive with conventional generation, according to the Lazard's Levelized Cost of Energy Analysis November 2020 report. Similarly, in the transportation sector, electric vehicles have received a boost from the rapid decline in the cost of lithium-ion batteries—BloombergNEF estimates that lithium-ion battery pack prices had fallen 89% between 2010 and 2020. Entrepreneurs and investors have recognized areas such as these where the economics of certain technologies now stand on their own. The behaviors of many of the largest integrated oil majors, which, according to BloombergNEF, are increasingly setting ambitious climate targets and planning deep transition-related investments, reveal the extent to which the energy transition has already been set in motion.

Social impact bonds are a relatively new and evolving investment opportunity which is highly speculative and involves a high degree of risk. An investor could lose all or a substantial amount of their investment.

⁴ Capgemini Research Institute: How sustainability is fundamentally changing consumer preferences. March 2020.

⁵ McKinsey: Five ways that ESG creates value, November 14, 2019.

⁶ Ibid

⁷ ESG Matters—Global: ESG “need to knows” for corporates: Disclosure, Part 1. BofA Global Research. August 31, 2020.

⁸ Khan, Serafeim, Yoon: Harvard University: Corporate Sustainability: First Evidence of Materiality, February 1, 2017.

Task Force on Climate-related Financial Disclosures (TCFD) was established in 2015 to develop a set of voluntary, consistent disclosure recommendations about climate-related financial risks. Nearly 60% of the world's 100 largest public companies support the TCFD, report in line with the TCFD recommendations, or both.

Source: TCFD report as of October 2020.

Despite these advancements, significantly more investment is required. In order to achieve the objectives of the Paris Agreement on limiting global temperature increases this century to 2 degrees Celsius above preindustrial levels, the level of investment needed for energy systems alone is estimated to range between \$1 trillion and \$4 trillion per annum over the next 30 years by both Boston Consulting Group and Global Financial Markets Association December 2020. This financing deficit reflects the urgency of the problem, but also presents opportunity for all actors in society, including investors.

Implementation Approaches within the CIO “ABC Framework”

Investors have historically found it challenging to deploy capital in the climate finance space due in part to the dearth of options and guidance. As markets have expanded, the ability to implement climate-oriented investment strategies into a portfolio context has improved.

The Chief Investment Office has closely tracked the evolution of capital markets in response to climate change and has adapted a framework for sustainable investing from The Impact Management Project* as the reality of climate change has become clear. At a high level, the three primary approaches include:

Avoid (exclusionary screens)

- Reduce and eliminate exposure to carbon-intensive industries
- Divest from companies that are engaging in harmful deforestation or otherwise harming biodiversity
- Reducing exposure to resource-intensive companies/industries

Benefit (sustainable strategies)

- Invest in companies that have "best-in-class" environmental strategies employing environmental frameworks as analytical tools throughout the investment process, including alignment with the UN's Sustainable Development Goals (SDG) or other environmental framework such as Task Force on Climate-related Financial Disclosures (TCFD), Sustainability Accounting Standards Board (SASB), etc.
- Invest in companies that are leading the energy transition in their respective sectors

Contribute (outcomes-based or impact solutions)

- Investment in highly resource-efficient or alternative energy sectors
- Investment in storage, smart grids, electric autos, or in companies, municipalities or infrastructure focused on clean energy/renewables
- Innovations in sustainable food, agriculture, forestry and clean water solutions

Avoid



Seek to reduce negative social or environmental effects and manage risk by limiting certain exposures

Benefit



Seek to support positive social or environmental practices and enhance potential for long-term competitive financial returns

Contribute



Seek to advance positive, measurable social or environmental outcomes and target opportunities where impact is intrinsic to financial performance

*Impact Management Project (IMP) provides a forum for building global consensus on measuring, managing and reporting impacts on sustainability.

Various factors are now coalescing to potentially shift the climate finance space into high gear, with climate-oriented investment strategies poised to benefit. Governments across the globe are looking to implement a variety of policies to address the climate crisis; innovation continues to drive technological deployment; and investor interest and awareness have begun to alter everything from disclosure to investment mandates to portfolio allocations. We believe these forces may likely cause disruptions across various sectors, impacting market pricing, cost of capital and profitability. Investment approaches such as those highlighted in Exhibit 2 may help to mitigate the resultant climate-related risks or capitalize on potential emergent opportunities.

Exhibit 2: Range of Risk and Return Profiles for Sustainable and Impact Investments.

	Debit/Credit /Fixed Income	Equity	Alternative Solutions
Above		<ul style="list-style-type: none"> Renewables/sector focused Long/short sustainable hedge funds Investing in “resource efficient” public companies Thematic strategies focused on solution providers 	<ul style="list-style-type: none"> Growth private equity investments in renewables Venture capital in energy transition sectors such as battery storage, green transport Sustainable agriculture and food (food/waste reduction/plant-based foods)
Market	<ul style="list-style-type: none"> “E” leaders corporate issuers Munis focused on sustainable cities/energy transition Green and transition bonds 	<ul style="list-style-type: none"> Diversified strategies with a focus on environmental leaders Low carbon Green Real Estate Investment Trusts 	<ul style="list-style-type: none"> Renewables project financing and infrastructure SDG focused diversified private equity
Below	<ul style="list-style-type: none"> Environmental community loan fund 		<ul style="list-style-type: none"> Water or sewer projects focused on underserved communities
	Lower Risk		Higher Risk

Source: Chief Investment Office as of April 19, 2021. For illustrative purposes only. This illustration details the sustainable investing universe across investments related to the “ABC” approach and have a range of potential investment risks and returns.

Asset Allocation

In the end, environmental activism is on the rise and we believe will likely continue to mount as key stakeholders come to grips with the multilayered concerns of climate risks—issues that include shrinking arable land, hotter and debilitating weather patterns around the world and extreme weather events, to name a few. Climate risk touches every aspect of life—politics, economics, finance, ingrained inequalities, demographics, migration—the list goes on. Against this backdrop, we believe that companies that embrace more climate-friendly business models and operations, as well as products and services, are likely to experience the potential for sustained growth opportunities over the long term.

We believe that portfolio strategies in the coming years has the potential to allocate more capital to assets backed or underpinned by high sustainability. ESG-related assets have surged recently on the need to improve income inequality, promote diversity and address the challenges of climate change accentuated by the pandemic. Moreover, structural dynamics like rising political pressure, regulatory change and technological advances may be additional planks to consider sustainable investing and capital reallocation.

Social impact bonds are a relatively new and evolving investment opportunity which is highly speculative and involves a high degree of risk. An investor could lose all or a substantial amount of their investment.

Doing well and doing good have become strategic priorities of many firms and the asset managers that invest in them. We believe those firms that are the most transparent about their goals, and are better at execution, may likely reward investors over the long term. In that way, adding a sustainability lens to your investments may help to prove beneficial by uncovering risks and potential opportunities not apparent with traditional analysis, and may create a more robust investment approach that better aligns with portfolio goals.

INVESTORS CAN PARTICIPATE IN REAL IMPACT IN MANY DIFFERENT AREAS WITHIN THE CIO SUSTAINABLE INVESTING FOUR PILLARS

People	Planet	Principles of Governance	Prosperity
Commitment to engaged and healthy workers	Commitment to climate and environmental sustainability	Commitment to ethics and societal benefit	Contributions to equitable, innovative economic growth and sustainable communities
			

Index Definitions

Securities indexes assume reinvestment of all distributions and interest payments. Indexes are unmanaged and do not take into account fees or expenses. It is not possible to invest directly in an index. Indexes are all based in dollars.

University of Notre Dame Global Adaptation Index (ND-GAIN) summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience. It aims to help businesses and the public sector better prioritize investments for a more efficient response to the immediate global challenges ahead.

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Impact investing and/or Environmental, Social and Governance (ESG) managers may take into consideration factors beyond traditional financial information to select securities, which could result in relative investment performance deviating from other strategies or broad market benchmarks, depending on whether such sectors or investments are in or out of favor in the market. Further, ESG strategies may rely on certain values based criteria to eliminate exposures found in similar strategies or broad market benchmarks, which could also result in relative investment performance deviating.

Investments have varying degrees of risk. Some of the risks involved with equity securities include the possibility that the value of the stocks may fluctuate in response to events specific to the companies or markets, as well as economic, political or social events in the U.S. or abroad. Investments in foreign securities involve special risks, including foreign currency risk and the possibility of substantial volatility due to adverse political, economic or other developments. These risks are magnified for investments made in emerging markets. Bonds are subject to interest rate, inflation and credit risks. Investments in a certain industry or sector may pose additional risk due to lack of diversification and sector concentration. Investments in real estate securities can be subject to fluctuations in the value of the underlying properties, the effect of economic conditions on real estate values, changes in interest rates, and risk related to renting properties, such as rental defaults. There are special risks associated with an investment in commodities, including market price fluctuations, regulatory changes, interest rate changes, credit risk, economic changes and the impact of adverse political or financial factors.

Alternative investments are intended for qualified investors only. Alternative Investments such as derivatives, hedge funds, private equity funds, and funds of funds can result in higher return potential but also higher loss potential. Changes in economic conditions or other circumstances may adversely affect your investments. Before you invest in alternative investments, you should consider your overall financial situation, how much money you have to invest, your need for liquidity, and your tolerance for risk.

Alternative investments are speculative and involve a high degree of risk.

An investment in Green Bonds involves risks similar to an investment in debt securities of the issuer, including issuer credit risk and risks related to the issuer's business. You should review the relevant offering document carefully before investing.

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