Climate Change and Greenhouse Gas Emissions

In the past few years, there has been a surge of shareholder proposals seeking greater transparency regarding the financial risks and opportunities created by a changing climate and the policies implemented to address them. Concerned shareholders seek to determine how companies are reducing their contribution to climate change and managing their climate-related exposure, and how this may affect shareholder value.

Scientists generally agree that gases released by chemical reactions, including the burning of fossil fuels, contribute to a "greenhouse effect" that traps heat in the planet. The predominantly held scientific view, as demonstrated by a United Nations 2013 Intergovernmental Panel on Climate Change (IPCC) report, is that greenhouse gases (GHGs) produced by the rapid consumption of fossil fuels during the industrial age have caused temperature increases and resulting weather crises such as heat waves, severe rainstorms, droughts, wildfires, increased intensity and frequency of storms, rising sea levels, and receding coastlines. The consequences for the global economy and the ecosystems supporting it could be significant. The IPCC estimates that the higher the average annual temperature range rises, the more severe the impacts will be. If warming increases, as expected, by 5 degrees Celsius, the IPCC states that the world should anticipate hundreds of millions of people to face water stress, reduced farming productivity in some regions, increased health burdens, the extinction of many animal species, significant coastal flooding, and other detrimental impacts on the ecosystem. The report also predicts rapid migration of people. If warming continues at current rates, the U.S. could expect to lose about 1.2 percent of gross domestic product for every 1-degree Celsius warming (1.8-degrees Fahrenheit), with an estimated $54 to $69 trillion in damages by 2100.

In October 2018, the IPCC released a new report which concluded that the world would need to reduce CO_2 emissions by about 45 percent from 2010 levels by 2030 to keep warming at no more than 1.5 degrees Celsius. The report also noted that 20-40 percent of the global population live in regions which had already experienced warming of more than 1.5 degrees Celsius above pre-industrial levels in at least one season from the period of 2006 to 2015.

Companies are expected to face both physical risks caused by changes in the ecosystem, transition risks linked to market and regulatory changes made to energy systems to avoid the worst of the impacts, and reputational risk stemming from changing public opinion. U.S. Treasury Secretary Janet Yellen recently touched on a shift towards stress testing to address the risks companies are exposed to, and the consequent risks financial institutions take on when investing in or lending to companies. As such, investors are pressing for more information on how companies are preparing for a lower-carbon future, including on their approaches to governance, strategy, risk management, metrics and greenhouse gas (GHG) emission reduction targets.

POLICIES IN PLACE TO REDUCE GHG EMISSIONS

Numerous state, national, and international GHG reduction regulations are likely to have a material impact on affected companies.

U.S. Federal Laws & Regulations are in a state of change.

- In 2007, the U.S. Supreme Court ruled that GHG emissions are an endangerment to human health, giving the U.S. Environmental Protection Agency the authority and responsibility to regulate them under the Federal Clean Air Act (CAA).

- The Obama administration had set a goal of reducing overall emissions 17 percent compared to 2005 levels by 2020, and an additional goal of reducing emissions 26-28 percent compared to 2005 levels by 2025. In order to reach this goal, the administration put a number of reporting rules, new-source performance standards, and regulations in place. Chief among these was a regulatory initiative called the Clean Power Plan, adopted in August 2015, which set state-specific CO_2 emissions goals and established guidelines to meet those goals. Despite these ambitions, the 2018 IPCC report on the impacts of global warming has noted with *high confidence* (9 in 10 chance of being correct) that pathways reflected by pledges put forth by the Obama administration and others under the Paris agreement would not limit global warming to 1.5-degrees Celsius, "even if supplemented by very challenging increases in the scale and ambition of emissions reductions after 2030."
- President Donald Trump, elected in November 2016, worked to dismantle the regulations and policies put in place by the Obama administration to reduce GHG emissions. In August 2018, the EPA proposed "the Affordable Clean Energy" (ACE) Rule as a replacement to the Clean Power Plan. It regulated GHG emissions much more weakly; it is estimated that it would reduce GHG emissions by 0.7-1.5 percent by 2030. Significant challenges have been posed against this rule in court, and the EPA asked the U.S. Court of Appeals to expedite review of the challenges On January 19, 2021, the D.C. District Court rescinded ACE, noting that the Trump Administration's interpretation of the EPA's power to change emission requirements was too limited. Moreover, the rule has been remanded to the EPA, allowing the Biden administration to to implement environmental policies, specifically relating to emissions and clean energy.
- Under the Obama Administration, new vehicle emissions standards had been put in place that would have required each manufacturer to achieve a fleet-wide average of 54.5 miles per gallon (MPG) by 2025. In August 2018, the Trump Administration acted to freeze current emissions standards after 2020 to an average of 36.9 MPG. California still intended to adhere to stricter standards, using a waiver that it had been previously granted. After the waiver was revoked by the EPA, California was joined by 22 other states and the cities of Los Angeles and New York in a suit challenging the Trump administration's move to take away the state's ability to set stricter emissions rules. The legal battle could last for years. If the courts rule in favor of the Trump administration, it will jeopardize California's mandate that automakers sell more zero-emission vehicles and plug-in hybrids and raises concerns about whether the state will be able to meet its goal of having more than 5 million such vehicles on the road by 2030. It would also affect the 13 states and the District of Columbia which followed California's car pollution standards, as allowed in the original terms of California's waiver, as well as the state's status as the national leader in the adoption of tougher tailpipe regulations and the promotion of electric vehicles.
- Shortly after former president Trump lost the election, major automakers including Toyota Motor, Subaru, and Fiat Chrysler joined General Motors in no longer supporting former president Trump's effort to prevent states from setting zero emission vehicle rules. It is unclear whether President Biden will decide to revert back to the emissions policy under the Obama administration, or if he will decide on something in the middle. Automakers have suggested a compromise reached with California regulators a year ago, where fleet fuels would be boosted by 3.7 percent every year, amounting to nearly 50 MPGs by 2026.
- Under President Biden, the White House is recalculating the Social Cost of Carbon (SCC), a figure calculated based on the difference in the market price of fossil fuels and the costs associated with environemntal costs. The SCC was set as low as $1 under the Trump Administraion, and the Bidens Administration has announced a figure of $51 a ton, which will likely increase in the coming year. The president issued climate change-related executive orders last month, which focuses primarily on ahiceving carbon pollution-free power sector by 2035 and attaining a net-zero economy by 2050. The orders touch on the importance of rejoining the Paris climate agreement, development in the Kigali Amendment to the Montreal protocol, and general collaboration with the international community. President Biden has appointed Gina McCarthy, former EPA Chief, as National Climate Advisor, and she

is tasked with devising a 2030 emission reduction target under the Paris agreement for the April 2021 summit. Additionally, they note advancement of projects to reduce emissions from infrasturues that present environmental risks. Given President Biden's approach thus far, further incorporation of cost-benefit analyses regarding emissions, and subsequent application to policy, should be expected.

Additional regional agreements and statutes that may affect U.S. companies:.

- Canada's Greenhouse Gas Pollution Pricing Act – Following the lead of British Columbia, Canada adopted a federal carbon polluting pricing system in June of 2018. The Act has two parts: a pollution price on fuel, known as the fuel charge, and a pollution price for industry, known as the Output-Based Pricing System (OBPS). In the OBPS, sectors can: pay $20/tonne, rising $10 each year to $50/tonne in 2022; submit surplus credits from a previous compliance year; and submit offset credits which are generated from projects that reduce greenhouse gas emissions or increase stored carbon.
- Alberta Canada's Climate Change and Emissions Management Act – This law requires existing facilities with emissions equal to or greater than 100,000 metric tons of CO_2 (or equivalent) per year to reduce net emissions *intensity* of that facility by 2 percent per year, with a reduction target of 12 percent. Alberta remains the second largest emitter in Canada as net emissions continue to increase annually.
- British Columbia's Carbon Tax – British Columbia introduced a carbon tax in 2008. The carbon tax applies "to the purchase or use of fuels in the province," and covers 70% of emissions. In 2019, the tax was raised to $40/tonne until it reaches $50/tonne in 2021. Revenue from the carbon tax in excess of $30/tonne will be used to provide carbon tax relief and protect affordability, maintain industry competitiveness, and encourage green initiatives, replacing an earlier system of revenue neutrality.
- California's Global Warming Solutions Act – In 2006, California passed a law mandating that GHG emissions be brought down to 1990 levels by 2020. The California Air Resources Board reported that the 2020 goal was met in 2018. In September 2017, California's Governor extended the target to a 40 percent reduction from 1990 levels by 2030. The Canadian province of Quebec joined the California Carbon Market in 2012 and Ontario announced it was joining in 2015.
- Regional Greenhouse Gas Initiative (RGGI) – This is a cap-and-trade initiative between nine Northeast and Mid-Atlantic states that initially called for a 10-percent reduction of power sector CO_2 emissions by 2019. RGGI states auction emission allowances and then reinvest proceeds into clean energy and energy efficiency programs. In response to criticism that the cap was initially set too high, RGGI made considerable improvements to the program with plans for more adaptability after 2021 if emissions fall well below the cap again. A November 2019 report shows that from 2015 to 2017, annual average CO_2 emissions in the RGGI region decreased by 45 percent compared to the base period of 2006 to 2008, and the region's aggregate emissions now rank in the top 20 among all nations. Moreover, the states set an additional goal to reduce emissions by 30 percent from 2020 to 2030.
- **Other local initiatives** – As of December 2019, 29 states, Washington DC and three territories have adopted renewable portfolio standards, or mandatory minimums of renewable energy, while eight states and one territory have set renewable energy goals. While most state renewable energy targets are between 10 and 45 percent, 13 states have requirements of 50 percent or more.
- In December 2019, Washington State Governor Jay Inslee joined California, Hawaii, New Mexico, and Puerto Rico in successfully enacting legislation which will transition Washington to 100 percent clean electricity by mid-century. The Washington Clean Energy Transformation Act is regarded as the nation's strongest policy for transitioning to 100 percent clean electricity because of its first-in-the-nation energy standards for buildings, gradual elimination of HFC superpollutants, and focus on clean transportation and efficient appliances.
- In March 2020, the Virginia Clean Economy Act commits the state to transition to 100 percent clean energy, a zero-carbon grid, by 2050. The law includes a requirement to phase out nearly all coal plants in the state by 2024, a cap-and-trade program, and efficient energy generation. Virginia is the ninth state to adopt such an act.

International Treaties

- Kyoto Protocol - The Kyoto Protocol came into force in February 2005. Over 175 countries ratified it, agreeing to lower emissions through regulations and market-based trading schemes. Most observers agreed that the agreement only had a slight effect on reducing global emissions growth because commitments were modest and because some of the largest GHG emitters did not participate.
- European Emissions Trading Scheme (ETS) – This is the European Union's (EU) "cap and trade" program for implementing the Kyoto Protocol. This trading scheme differs from others in that it permits offsets to be purchased outside the trading countries. The program covers around 45 percent of the EU's greenhouse gas emissions. Of the emissions covered, 2020 emissions are expected to be 21 percent lower than in 2005.
- The U.N. Framework Convention on Climate Change in Paris (known as "the Paris Convention" or COP21) - A landmark agreement reached in December 2015, in which 195 countries committed to reduce GHG emissions to a level that is intended to keep the rise of the global average temperature to "well below" 2°C, and striving for 1.5°C. As of 2018, it was estimated that 7 out of the 25 major emitting countries were on track to meet their 2025/2030 targets. Other goals include reaching peak emissions "as soon as possible" and balancing GHG sources and sinks "by the second half of this century." To help achieve these goals, $100 billion per year was pledged to assist developing countries by 2020, with additional commitments to be made in 2025. As of 2019, the Green Climate Fund, which is the official financial mechanism of the Paris Agreement to direct climate finance to developing nations, had only raised $9.8 billion of the promised $100 billion. The goal was extended to 2025. The Conference inspired an increase in assets committed to the Portfolio Decarbonization Coalition, from $100 billion to $800 billion. Each country was responsible for setting its own emissions reductions targets and regulations. In June of 2017, former president Trump announced that the U.S. would pull out of its obligations set by the Obama administration. President Biden recommitted to the agreement on his first day in office, and in February 2021, the U.S. officially rejoined the agreement.
- The Montreal Protocol is an international treaty, signed by every country in the world, designed to limit production of substances that damage the ozone layer. In 2016, parties agreed to add the Kigali Amendment, which requires countries to reduce their production of hydrofluorocarbons (HFC), powerful greenhouse gases contributing to climate change.

U.S. Securities and Exchange Commission (SEC) Guidance on Climate Change

In 2010, the SEC issued climate change disclosure requirements to provide additional guidance for publicly owned companies. The voluntary guidelines highlighted the following areas as examples of where climate change may create risks to corporations:

- Impact of Legislation and Regulation
- Impact of International Accords
- Indirect Consequences of Regulation or Business Trends
- Physical Impacts of Climate Change

The SEC also said the standard that should be used to determine materiality for disclosure requirements regarding climate change should be based on the substantial likelihood that an average investor would consider it important.

In April 2016, the SEC requested public comment on modernizing certain disclosure requirements, including those related to climate change and other corporate social responsibility topics. The comment period ended on July 21, 2016. No additional corporate social responsibility reporting requirements came out of the inquiry.

The SEC has been criticized as not providing the level or kind of information that investors need to assess companies' risk management policies and procedures, but especially as it relates to climate change disclosures. In light of the transition to the Biden administration and the appointment of Acting Chair Allison Lee, the SEC's

approach to climate change disclosures has significantly changed. In February 2021, Chair Lee released a statement noting the increasing attention the SEC will pay to climate-related disclosures in company filings, specifically updating the 2010 guidance on such disclosures based on climate-related developments in the last decade. The statement emphasizes the importance of climate change considerations for investors, and the SEC's role in providing companies with guidance to produce valid disclosures. Companies will be subject to increased scrutiny, at a minimum, around their considerations and disclosures around the four primary risks outlined in the SEC's 2010 Guidance. These risks include: impacts of regulations; impact of international agreements; changes in demand and risks as a result of climate change, specifically relating to resources and energy sources; and physical impacts of climate change.

INVESTOR INITIATIVES

Institutional investors are increasingly seeking more transparency around climate risk and commitments. Organizations such as the Carbon Tracker Initiative have worked to publicize the risk to shareholders of investing in energy companies that may be deriving much of their worth from assets that would become stranded if or when markets or governments take action to limit commercialization of fossil fuel assets. Since 2017, several large institutional investors, including BlackRock, State Street, and Vanguard Group, have reportedly made climate change a priority in their engagements with certain issuers, and shifted their proxy voting to support more climate-related shareholder resolutions. In 2019 BlackRock announced that by the end of 2020, "all active portfolios and advisory strategies will be fully ESG integrated – meaning that, at the portfolio level, [BlackRock's] portfolio managers will be accountable for appropriately managing exposure to ESG risks and documenting how those considerations have affected investment decisions." BlackRock is also asking companies to publish SASB- and TCFD-aligned disclosures, which should include the company's plan for operating according to the Paris Agreement's goal of limiting global warming to less than two degrees Celsius, because the asset manager believes that sustainability-integrated portfolios provide better risk-adjusted returns to investors.

The focus on climate change and emissions is only becoming more prominent, as demonstrated by the 60 proposals that have been filed as of February 22, 2021. In comparison, for 2020, shareholders filed 56 climate change related shareholder proposals (as of June 30,2020) of which 34 were withdrawn by shareholder proponents, and 12 were allowed to be omitted by the SEC. Eleven proposals made it on the ballots, and of these, four received majority shareholder support. The majority vote getting proposals asked: Dollar Tree to report on aligning its business strategy with climate change constraints; Ovintiv to report on climate change risks; Phillips 66 to report on Gulf Coast petrochemical investments; and J.B. Hunt Transport Services to report on plans to align its GHG emissions with Paris Agreement goals.

Also in 2020, there was an increasing number of shareholder proposals filed outside of the U.S., particularly in Australia, Canada, and Europe, and particularly on the issue of climate change. A new trend in 2020 was the shareholder focus on the financial sector, with proponents filing proposals that asked banks in Canada, Europe, and the U.S. to report on their plans to reduce the GHG emissions of their lending activities in alignment with the Paris Agreement goals. Such a proposal received close to majority support at JPMorgan Chase (49.6 percent).

In an attempt to make the board of directors more accountable to climate change risks, various proponents have asked for boards to establish a new board committee on climate change. Proponents are also asking for reporting and overall increased disclosure on environmental problems that are projected to be made worse by global warming, such as water risk stemming from climate change, and issues that exacerbate warming, such as deforestation. Furthermore, there has been a shift towards shareholder proposals asking companies to link ESG metrics with executive compensation.

Some targeted companies, such as natural gas exploration or distribution companies, are being asked to disclose more information about their efforts to reduce methane emissions since methane is the primary component of natural gas. In terms of climate impact, the Environmental Defense Fund estimates that methane is 84 times more potent at trapping energy than carbon dioxide in the first two decades after its release.

Several proposals that are asking for more transparency around political contributions and lobbying explicitly mention concerns about the risk of supporting organizations that are opposing climate change legislation or regulation at the same time that the company publicizes support for climate action.

Several coalitions have emerged as investors band together to seek more transparency. The Ceres Investor Network on Climate Risk and Sustainability now has more than 175 institutional investors managing over $29 trillion in assets committed to addressing climate change. The U.S. has now rejoined the Paris agreement, but in response to former president Trump's withdrawal from the accord, many businesses, investors, faith groups, tribes, elected officials, universities and others have pledged continued commitment to the Paris Agreement's goals as part of the "We Are Still In" campaign representing $9.46 trillion in GDP. Climate Action 100+ has brought together more than 545 investors with over $52 trillion in assets under management to engage with over 167 companies on improving governance, curbing emissions, and strengthening climate-related financial disclosures. In addition, a group now called the Climate Majority Project (originally the 50/50 Climate Project) is working to "engage public company boards to respond to the challenges and opportunities presented by climate change and to increase their climate competency." On February 17th, 2020, Amazon CEO Jeff Bezos announced he is committing $10 billion to fight climate change. The Bezos Earth Fund will support scientists, activists, NGOs, or "any effort that offers a real possibility to help preserve and protect the natural world."

A number of organizations have developed carbon disclosure standards to help companies understand and report their climate risk, however companies and investors have complained that best practices are hard to discern in a crowded and confusing landscape. Some commonly-used frameworks are those established by CDP (formerly the Carbon Disclosure Project), the Global Reporting Initiative, the PRI (formerly the UN Principles for Responsible Investment), SASB (Sustainability Accounting Standards Board), and We Mean Business.

In an attempt to make disclosure standards clearer and more uniform, in June 2017, the Task Force on Climate-Related Financial Disclosures issued its final recommendations for voluntary climate-related risk disclosure. The recommendations call for companies to make climate-related financial disclosure reporting alongside more mainstream financial reporting and to report on governance, strategy, risk management, and the metrics and targets used to assess performance toward climate goals. In its latest Status Report issued in the Fall of 2019, the Task Force strongly encouraged more companies to utilize its reporting recommendations, especially companies with material climate-related risks, because it is "concerned that not enough companies are disclosing information about their climate-related risks and opportunities."

CORPORATE INITIATIVES

Because of these factors, and in response to pressure from shareholders and customers, many companies have moved ahead with company-specific actions, such as disclosing information about their energy use and stranded asset risk, pledging carbon emission reduction goals, and/or making energy efficiency and renewable energy goals. Many companies are reporting cost savings from reduced energy use and from potentially cheaper and/or less volatile energy prices. One report found that renewable energy and energy efficiency investments saved companies nearly $3.7 billion in 2016 alone. Both wind and solar prices have been dropping steadily, even hitting record lows, and owning renewable energy projects can give companies protection against energy price volatility. Several large retailers are taking advantage of lower solar panel costs and moving aggressively to install onsite solar roofs.

In terms of risk management, the TCFD Status Report's review of 1,126 large companies' publicly available reports found that in 2018, about 30 percent of companies were disclosing the organization's process for assessing and managing climate-related risks, but only 17 percent were describing how climate-related risks are integrated into the organization's overall risk management. The TCFD 2020 Status Report notes that since then, there has been a significant increase in those aligned with the recommendations – over 1,500 organizations have expressed their support, an 85 percent increase since the 2019 report. Additionally, nearly 60 percent of the world's 100 biggest companies, support the recommendations, report in line with, or do both,

and approximately 42 percent of companies with market caps over $10 billion provided some disclosure in line with TCFD recommendations in 2019.

Several partner organizations came together to create the Science Based Targets initiative to provide support to companies interested in setting rigorous, validated targets that would be in line with warming no greater than 1.5 degrees Celsius. To date, 603 companies have approved science-based targets, and 1,215 companies are taking science-based climate action as part of the initiative.

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