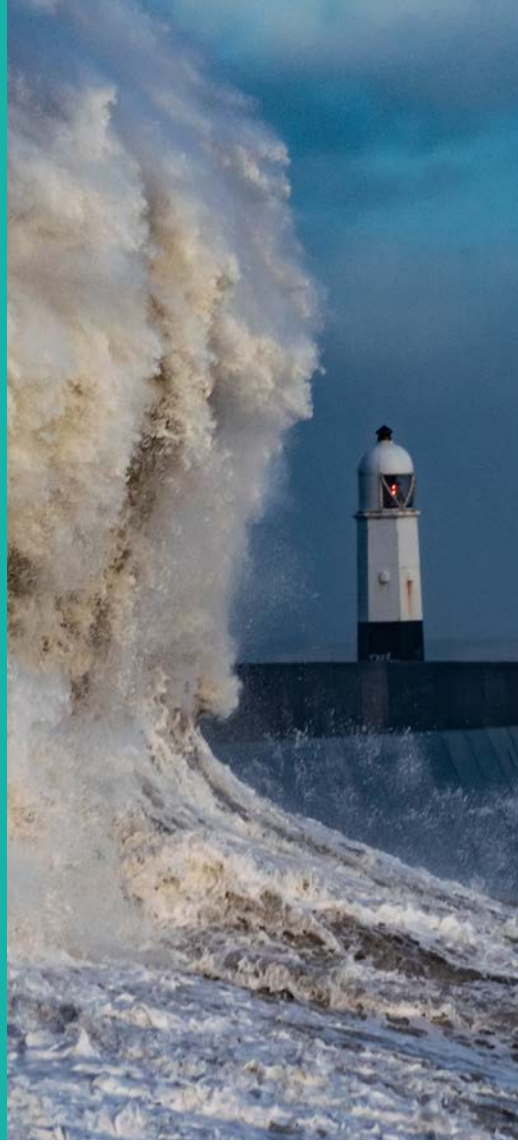
Sustainability Toolkit

Climate Change as an Accelerant of Risks and Opportunities

Global warming. Climate change. Weather events. However one characterizes them, the challenges of our time pose a growing threat to corporate performance and sustainability efforts. The risks are increasingly evident. But with crisis also comes opportunity—for learning, pivoting, and mitigating risks to be more climate friendly and resilient.



Click below (or scroll on mobile devices) to view some of the key questions and issues you need to consider in assessing and addressing risk and opportunity:

How is climate change already impacting businesses? +

What are some of the key climate risks that companies must consider carefully? +

What opportunities are there for companies to be part of the solution? +

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How is climate change already impacting businesses?

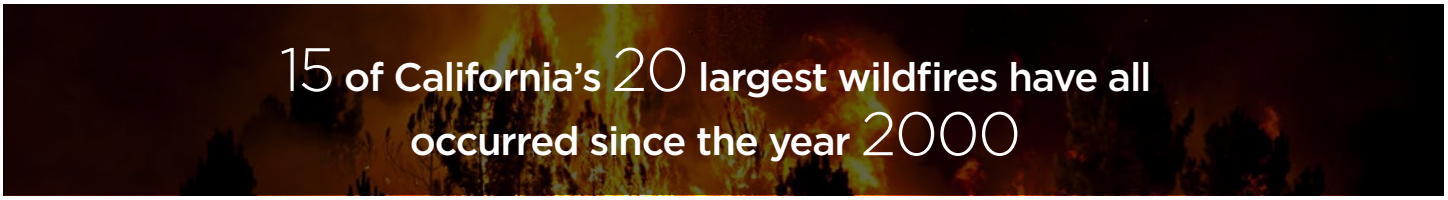
Climate change is no longer a stone to kick down the road. It is here, prompting businesses to consider climate-related threats and disclosures as part of an overall strategy for evaluating financial risk.

Climate-related Risk Disclosures

- A growing number of companies have started to file climate disclosures that indicate expected climate-related financial impacts within the next five years.
- Such disclosures by individual firms, in the aggregate, represent a staggeringly high financial risk: at least $250 billion in assets that will need to be written off or retired early as a result of climate change.

The First Climate Bankruptcy?

- The most visible story in the emerging area of climate risk is the Pacific Gas & Electric Company's 2019 bankruptcy. In the wake of California's deadliest fire in state history, the 2017 Camp Fire, and facing billions of dollars of potential liability in relation to that and other wildfires (most notably, the Tubbs Fire), PG&E succumbed to what commentators dubbed the country's first "climate bankruptcy."
- When the stories were written, however, reporters noted this would be the first, but not the last:



Many analysts assert that, notwithstanding a growing societal acknowledgment of this risk, PG&E still failed to adequately anticipate and prepare. According to the *New York Times*, in 2018, based on claims paid in 2017, PG&E had estimated a potential wildfire liability of $2.5 billion; its 2019 bankruptcy was spurred by wildfire liabilities reaching nearly $30 billion.

What are some of the key climate risks that companies must consider carefully?

Lower Worker Productivity and Availability

- Climate change is likely to have significant impacts on workforces, though the exact impacts will vary according to industry and location, e.g. extreme heat could reduce worker productivity and endanger those required to work outdoors, such as construction or farm workers.
- Extreme weather events may also increase risk of worker injury in addition to causing problems with consistent staffing and efficient labor.

Increased Need for Power and Cooling

- Increased cooling needs will likely cause strains on power resources at peak times, presenting challenges for businesses but also presenting arbitrage and demand-side management opportunities. Technology companies that rely on the use of data servers might be particularly exposed to such a risk, given their heightened cooling needs.

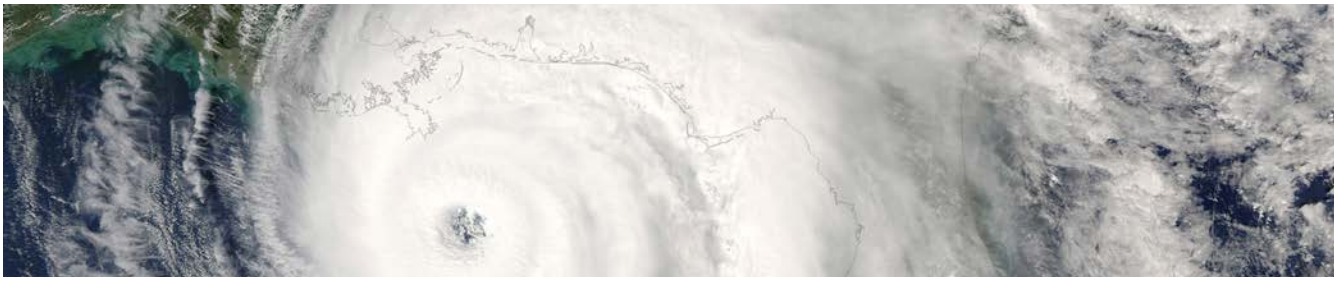
- Investment in storage, efficiency, and renewable energy (which is not subject to the volatility of fuel prices) is likely to become increasingly important in the face of cooling-related demand spikes.

Water Supply Shortages

- Depending on the business, water access issues present serious operation and public relations risks. Companies that attempt to privatize water access may be subject to serious public backlash, especially if they also pollute increasingly scarce drinking water.
- In areas with water scarcity, government entities are likely to play an increasing role in regulating resources, and access is likely to become more costly and less secure. In many areas, for example, previously unregulated groundwater resources may come under tighter regulatory control.
- Navigating water's changing regulatory climate, investing in efficiency measures, and building in flexibility in terms of water access are all likely to be critical considerations.

Impact of Intense Hurricanes

- Climate change has increased, and continues to increase, the severity of hurricanes. For example, storms the size of Hurricane Harvey once occurred approximately once every hundred years but now are expected to occur once every 16.



- The Congressional Budget Office projects annual damage from hurricanes (from winds and flooding) to be **$54 billion**.
- As hurricane intensity increases, so does the threat to business continuity and supply chain management.

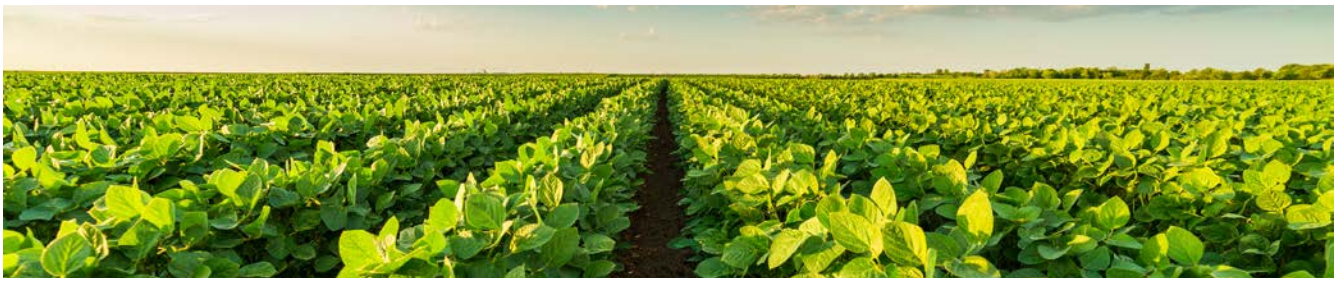
Loss of property from flooding

- Government subsidies of flood insurance have long encouraged unsustainable overbuilding in flood-prone areas. The problem is similar in "fire ecologies" that are subject to frequent burns.

- As climate change increases the frequency and severity of floods and fires, and increases the size of flood and fire zones, policy makers and the general public are increasingly turning their attention to the perverse incentives promoted by inexpensive flood and fire insurance (and by other forms of relief for areas impacted by 'natural' disasters).
- Any company with holdings in flood or fire-prone areas must keep in mind increasing risks of property damage, business interruption, and higher insurance costs. Disaster-resistant development, proactive mitigation measures, and active monitoring of a shifting regulatory environment will all be important steps.

Changes in Growing Conditions and Other Agri-business Impacts

- The agricultural sector is highly vulnerable to climate change. Over the last few years, the American Midwest experienced record heat and dryness followed by record rain and flooding. This kind of frequent extreme weather wreaked havoc on crop yields, including corn.



- Businesses in the ag sector are coming to terms with this reality and exploring more sustainable and resilient farming techniques—and some scientists have even proposed that such techniques could be a way, in the long term, for farms to become part of the solution pulling carbon from the atmosphere.

> "Some states in the Southeast, lower Great Plains, and Midwest are at risk of experiencing a
>
> **50% to 70% loss**
>
> in average annual agricultural productivity (i.e., yields of corn, soy, cotton, wheat), without meaningful agricultural adaptation."

What opportunities are there for companies to be part of the solution?

The global transition required to meet the Paris Agreement's 2-degree Celsius target represents at least $33 trillion to be invested in clean energy and efficient infrastructure by 2035. Markets are already trending in this direction: global investment in renewable energy far outstripped investments in new fossil fuel generation in 2018, and 2018 was the fifth consecutive year renewable capacity investment exceeded $250 billion.

Earning and Preserving a Reputation for Sustainability

- Sustainability is often a priority for stakeholders, and a well-deserved reputation for sustainable practices can improve a company's standing with customers and with communities in which it operates.
- Companies can exhibit leadership by developing their own governance practices and mechanisms with regards to climate and sustainability governance; for example, companies can institute a culture of transparency and disclosure as it relates to emissions and emissions reductions efforts.

Zero Emission Vehicles

- All companies, but particularly those that operate major vehicle fleets, have an opportunity to reduce their carbon emissions by electrifying their vehicle fleets. As major auto manufacturers increasingly invest in the production of electric vehicles, effecting such a policy change is increasingly accessible and affordable, and, in some states, companies may be able to participate in Zero Emission Vehicle (ZEV) regulatory frameworks by working to electrify their fleets.
- Additional considerations include: federal fuel efficiency and ZEV mandates; California exemption and other states that follow CA; ZEV and fuel efficiency regulations in other countries; tax and other incentives from various jurisdictions for the production and purchase of ZEVs; approaches to financing a transition to ZEV fleets.

Clean Energy Technology

- Policymakers across the globe have increasingly acknowledged the need to reduce emissions, which will require a massive effort to invest in and manufacture clean energy technology. Incentives and regulations in this area are rapidly evolving. Businesses will want to stay abreast of—and provide input on—regulatory developments and consider availing themselves of incentives.

- Regulatory policies to watch include changes in building codes, mandates for renewable energy, and fuel efficiency requirements.

Battery Storage

- Battery storage offers a range of environmental and financial benefits. It allows businesses to utilize a higher percentage of renewable energy, provides a back-up source of power in the event that grid service is disrupted, and allows businesses to reduce energy costs by acquiring energy at low-cost during off-peak hours and then deploying it during peak times.
- Businesses that use large amounts of energy may be able to structure purchase agreements to get excellent rates to use energy primarily during off-peak hours and during hours during which the grid has maximal renewable capacity on line. Battery owners may also be able to store renewable energy and then sell it back to the grid at night when no solar power is being produced.
- Incentives and financing options can make battery storage more affordable. These options should be assessed to help determine the scale and nature of any investment in battery storage.

Sustainable Farming and Land Conservation

- Land use is becoming increasingly recognized as a key part of slowing and mitigating climate change. As carbon impacts of land use become better understood, agriculture and other intensive uses of land are likely to come under increasingly complex regulation.

- Regenerative agriculture and other practices that help remove carbon from the atmosphere and sequester it in the soil have tremendous potential as keys to a sustainable future economy. Companies may want to understand better and account for the carbon impacts of their land use practices and sustainable land users may be able to internalize the benefits of their practices by verifying and selling carbon credits.
- Existing and developing tax and regulatory structures may also make it more financially viable to engage in sustainable land use. Conservation easements, for example, provide tax benefits in exchange for environmental preservation.

Infrastructure and Enhanced Resilience

- Infrastructure and enhanced climate resilience are likely to see massive amounts of investment as the planet warms, shorelines shift, and changing weather patterns render whole regions vulnerable to novel threats. This provides companies with the opportunity to shape the future of the built environment and to benefit from huge amounts of public and private investment.
- In order to take advantage of such infrastructure and investment in enhanced reslience, companies must be prepared to navigate a complex web of incentive programs, permits, zoning regulations, and community benefit agreements.

Sustainability Toolkit

Explore the topics	Defining Sustainability	Public Policy: Climate Change	Public Policy: COVID-19	Public Policy: Environmental Justice	Public Policy: UN Sustainable Development Goals
Engaging and Advising BODs	Investor Expectations	Corporate Disclosure: The Basics	Corporate Disclosure: Standards and Initiatives	Setting Corporate Goals	M&A and JV Transactions
Green Bonds and SLLs	Carbon Markets	Marketing Claims	Crisis Management	Insurance Implications	Sustainability NGOs