

# Equilibrium Viewpoint on: Climate Risk Metrics & Measurement

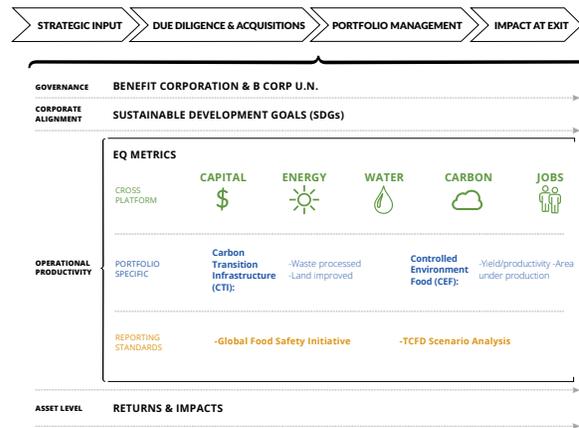
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## WHY REPORT ON CLIMATE RISK?

We chose elements of the most recent iteration of **Equilibrium’s Sustainability Framework** specifically to link the operational performance of our portfolios to valuation and risk pricing, as well as communicate alignment with third-party standards to external stakeholders. In general, Equilibrium views sustainability metrics as falling into one of two buckets:

- **Externally facing guidelines, certifications, and specifications** such as the United Nations’ Sustainable Development Goals (SDGs), SASB Standards, and B Corp certification, which serve governance, compliance, and reporting commitments; and
- **Internally focused measures of proprietary operational indicators** intended to drive decision-making, operating as well as financial objectives setting, and performance.

This Viewpoint is focused on the latter, and on Equilibrium’s quest to link measurement of sustainability-driven productivity to risk, resiliency, and, ultimately, returns.



For us as an asset manager, risk, time, and judgment are essential elements to the ability to deliver returns. We develop all Equilibrium’s investment theses via a rigorous research-driven process in which understanding and quantifying opportunities and risks is front-and-center.



Nowhere is this clearer than in our Task Force for Climate-Related Disclosures (TCFD) work. The TCFD recommendations are a cornerstone of Equilibrium’s Sustainability Framework. In our **Framework 2.1 report**, we pioneered a qualitative, portfolio level assessment of the impacts of physical and transition risk corresponding to 2°C and 4°C climate scenarios on our Carbon Transition Infrastructure (CTI) and Controlled Environment Food (CEF) strategies. The results were positive; Equilibrium’s strategies are inherently resilient and expected to outperform traditional solutions for food production, water and waste management, and energy production. In 2021, we committed to extending this effort to a quantitative, asset-level analysis.

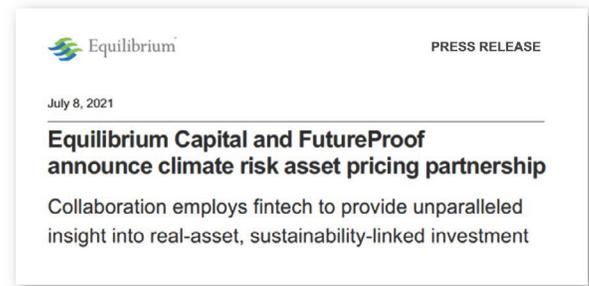
Accounting for climate risk impacts is now no longer optional in a growing number of geographies. Disclosures are mandated in parts of Europe and new U.S. rules are expected soon from the SEC. More broadly, global frameworks are demanding these assessments. Due diligence questions on climate exposure are now commonplace, as institutional investors consider the identification and mitigation of all risks to be an integral part of fiduciary duty. Quantification of climate externalities, and subsequent translation to real asset values is, we believe, the next chapter in risk pricing.

## QUANTIFYING PHYSICAL RISKS AT THE ASSET LEVEL

In June 2021, Equilibrium announced a partnership with **FutureProof**, a financial technology startup enabling companies to understand, quantify, and prepare for the financial impacts of climate change. FutureProof’s platform translates physical climate risk into specific monetary values, aligning with our goal of advancing sustainability reporting into operational measurement, risk management, and asset valuation. Beyond TCFD compliance, we can now build resiliency and identify opportunities for impact-driven returns.

We are leveraging FutureProof’s ability to project potential financial losses for catastrophic perils, as well as material shifts in the frequency and severity of non-catastrophic ones, in several key ways.

- Due diligence:** As a matter of course, Equilibrium assesses environmental risk in underwriting deals; however, existing models are typically backward-looking. We now incorporate forward-looking climate considerations into site selection models and due diligence checklists, which allow us to assess the vulnerabilities different climate scenarios pose to an asset or critical part of the supply chain.
- Asset valuation:** Equilibrium’s cash flow models more accurately project increases in climate-linked losses, e.g., annualized increases in insurance, repair, and maintenance costs, which have the potential to drive significant changes in values.
- Operational management:** We can identify which assets are the best candidates for resiliency upgrades and determine the return on investment associated with climate-related adjustments to property characteristics. We can also tailor select perils, such as the number of extreme temperature days, to operationally-specific criteria. Agriculture – whether it be in a controlled environment (as with Equilibrium’s CEF portfolio) or a critical piece of the value chain (as with the CTI one), is particularly sensitive to climate so determining outcomes for crops, livestock, and resources such as water and land, is crucial.
- Strategic opportunities and resiliency attributes:** Equilibrium can compare the impacts of climate risk on our assets with ‘counterfactual’ scenarios in which the additionality of our capital is absent. The most obvious example of this is in controlled environment agriculture (CEA) where a greenhouse’s ability to control the changing environment becomes a critical means to mitigate temperature volatility, precipitation, storms, and other perils faced by traditional field production.



### Catastrophic:

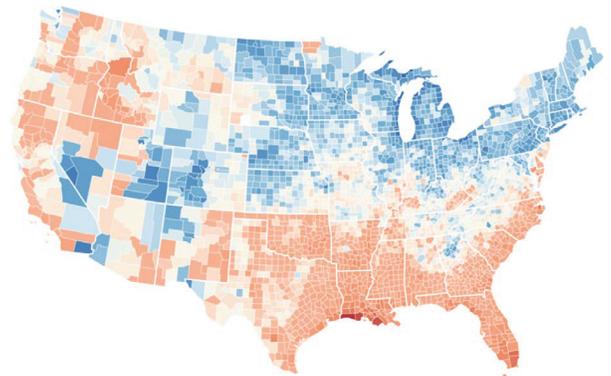


### Non-Catastrophic:



## Average Annual Financial Loss in 2021 from All Perils

FINANCIAL LOSS AS A % OF EXPOSURE  
0% 8%



### EQ SUSTAINABILITY DUE DILIGENCE CHECKLIST

**CLIMATE RESILIENCE:** The Task Force on Climate-Related Financial Disclosures (TCFD) has developed a framework to help public companies and other organizations disclose climate-related risks and opportunities. Under a TCFD scenario, GHG emissions are listed as a result of policy, regulation, and the development of new but other technologies. Under a TCFD scenario, emissions are not automatically reduced, meaning a more significant impact than just the change. Similarly, the TCFD scenario also includes increased operating costs as a result of the increased cost of capital and other policy implementation. The TCFD scenario also includes increased costs, more likely arising from disruption due to extreme acute weather events and chronic degradation of assets (CEA).

EQ	TCFD		
49	EC	Catastrophic	Flood: Is flooding a long-term threat? If so, what plans are in place to mitigate? <b>LOW RISK</b>
50	EC	Catastrophic	Hail: Is hail a long-term threat? If so, what plans are in place to mitigate? <b>MEDIUM RISK</b>
51	EC	Catastrophic	Hurricane: Is hurricane a long-term threat? If so, what plans are in place to mitigate? <b>LOW RISK</b>
52	EC	Catastrophic	Thunderstorm: Is thunderstorm a long-term threat? If so, what plans are in place to mitigate? <b>LOW RISK</b>
53	EC	Catastrophic	Tornado: Is tornado a long-term threat? If so, what plans are in place to mitigate? <b>LOW RISK</b>
54	EC	Catastrophic	Wildfire: Is wildfire a long-term threat? If so, what plans are in place to mitigate? <b>HIGH RISK</b>
55	EC	Catastrophic	Wind: Is wind a long-term threat? If so, what plans are in place to mitigate? <b>LOW RISK</b>
56	EC	Catastrophic	Snowstorm: Is snowstorm a long-term threat? If so, what plans are in place to mitigate? <b>LOW RISK</b>
57	EC	Non-Catastrophic	Heat: Does the change in number of days >40°C impact the project? If so, what plans are in place to mitigate? <b>LOW RISK</b>
58	EC	Non-Catastrophic	Heat: Does the change in number of days >40°C impact the project? If so, what plans are in place to mitigate? <b>MEDIUM RISK</b>
59	EC	Non-Catastrophic	Precipitation: Does the change in the number of extreme precipitation events impact the project? If so, what plans are in place to mitigate? <b>MEDIUM RISK</b>
60	EC	Non-Catastrophic	Earthquake: Is the probability of earthquake a threat to the project? If so, what plans are in place to mitigate? <b>HIGH RISK</b>
61	EC	Supply Chain	Supply chain: Will any of the physical risks listed above materially impact product inputs or distribution? If yes, what plans are in place to mitigate? <b>MEDIUM RISK</b>
62	EC	Supply Chain	Water: Will projected policy, regulation, or other measures materially impact the project? If yes, how? <b>MEDIUM RISK</b>
63	EC	Supply Chain	Water: Will projected policy, regulation, or other measures materially impact the project? If yes, how? <b>LOW RISK</b>
64	EC	Supply Chain	Water: Will projected physical, policy, or technology changes impact the market for the project's output? If yes, how? <b>LOW RISK</b>

Understanding climate related risk in financial terms allows Equilibrium to make informed investment management decisions, “live” examples of which are highlighted below.

## CEF LONGVINE GROWING CO., MONA, UT

Equilibrium’s 28-acre Longvine greenhouse is not considered to be at risk of catastrophic perils with one major exception – wildfire. Like many parts of the western U.S., Utah has experienced serious drought, which brings with it more, and larger, fires. In 2018, a wildfire that came within several hundred feet of the Longvine facility was extinguished by a substantial, coordinated effort with state and local firefighters. While the facility is insured against catastrophic risks, Equilibrium and Longvine have focused on mitigating fire risk with vegetation management, the use of fire-resistant materials, water access options, and other emergency planning measures.



The likelihood of continued seasonal heat-related risks is underscored by forecasts for an increase in the number of extreme heat days in excess of 40°C. While such climate “creep” may not impact the bricks-and-mortar real estate, implications for vine crop growing are substantial. In anticipation of higher cooling-related electricity costs and in a bid to reduce carbon emissions, CEF determined that a LED lighting retrofit at the Longvine Mona greenhouse would reduce electric demand from 14MW to 10.5MW – a 25 percent savings – while boosting tomato crop yields.

Predicting and budgeting for climate-informed upgrades to cooling and other environmental control systems is an important operational advantage vis-à-vis comparable facilities, as well as alternative field production scenarios.

## LONGVINE, UT CLIMATE RISK ASSESSMENT

Average Annual Damage		Total Average Damage	
		2021-2031	2021-2051
Longvine Mona vs. National Average		34.02%	100.00%
Average % Increase in Insurance, Repair, and Maintenance Costs		2022 to 2051	
Longvine Mona vs. National Average			2.86%
			2.85%
Catastrophic Perils		Total Average Damage	
		2021-2031	2021-2051
Flood		0.00%	0.00%
Hail		0.01%	0.03%
Hurricane		0.00%	0.00%
Thunderstorm		0.02%	0.05%
Tornado		0.00%	0.00%
<b>Wildfire</b>		<b>33.90%</b>	<b>100.00%</b>
Wind		0.03%	0.07%
Snowstorm		0.07%	0.20%
Non-Catastrophic Perils		Values	
		2020-2039	2040-2059
<b>Cold (days &lt; 0°C)</b>		<b>8.1</b>	<b>4.7</b>
<b>Heat (days &gt; 40°C)</b>		<b>1.0</b>	<b>5.7</b>
Precipitation (# of extreme events)		0.0	0.0
Earthquake (% probability)		10.0%	

## CTI GGP DIGESTER, MARICOPA, ARIZONA

Equilibrium’s Green Gas Partners (GGP) anaerobic digester facility faces minimal catastrophic risks. Despite Arizona’s dry climate, wildfire risk is relatively limited. Like the Longvine Mona facility, the most significant challenge facing GGP is an anticipated increase in the number of extreme heat days. This could translate to impacts on the facility’s supply chain, most notably to the operations of its host dairy farm and other proximate feedstock sources. These agricultural businesses depend on adequate water – in this case, from the Colorado River – and on an environment in which livestock can thrive. A better understanding of climate-related risks will improve our planning for waste-to-energy inputs, plus drive resiliency retrofits.

In general, Equilibrium’s CTI portfolio is particularly well-positioned to capture opportunities arising from increased heat scenarios like that forecast for GGP. While on-site cooling costs will impact financials, demand and pricing for renewable energy will increase. Resource scarcity means a heightened focus on reuse, which in turn, produces more revenue for CTI’s water and waste recycling assets.



## GGP, AZ CLIMATE RISK ASSESSMENT

### Average Annual Damage

	2021	2051
GGP (CTI)	0.04%	0.06%
vs. National Average	0.18%	0.27%

### Total Average Damage

	2021-2031	2021-2051
	0.47%	1.63%

### Average % Increase in Insurance, Repair, and Maintenance Costs

	2022 to 2051
GGP (CTI)	3.20%
vs. National Average	2.85%

### Catastrophic Perils

Flood	
Hail	
Hurricane	
Thunderstorm	
Tornado	
Wildfire	
Wind	
Snowstorm	

### Total Average Damage

	2021-2031	2021-2051
Flood	0.00%	0.00%
Hail	0.01%	0.04%
Hurricane	0.00%	0.00%
Thunderstorm	0.02%	0.06%
Tornado	0.00%	0.00%
Wildfire	0.40%	1.43%
Wind	0.02%	0.04%
Snowstorm	0.02%	0.05%

### Non-Catastrophic Perils

Cold (days < 0°C)	
Heat (days > 40°C)	
Precipitation (# of extreme events)	
Earthquake (% probability)	

### Values

	2020-2039	2040-2059
Cold (days < 0°C)	0.0	0.0
Heat (days > 40°C)	100.2	120.6
Precipitation (# of extreme events)	1.6	1.9
Earthquake (% probability)	0.0%	

## CONCLUSIONS AND NEXT STEPS

Even as Equilibrium begins to incorporate physical climate-related financial impacts into asset valuations, we're looking forward to expanding our understanding of corresponding operational and value chain impacts. We are also working to understand transition risk. For each climate scenario, we anticipate different policy, technology, and market outcomes for our assets. While not accounted for in FutureProof's outputs, we contrasted the effects of a more strictly regulated 2°C scenario entailing higher energy costs, renewables demand, and investment in technology disruptors, with the business-as-usual 4°C scenario, in which we expect to see limited public sector involvement and a greater need to protect against extreme weather events. Both scenarios will generate opportunities for Equilibrium and this analysis will give us a competitive edge in identifying return-generating strategies.

More broadly, we recognize the need to balance climate-related impacts with other performance metrics and sustainability commitments. This includes Equilibrium's Net Zero Commitment, the transition plan for which will depend on transparent, forward-looking carbon targets. We are paying equal attention to the "S" (people and community) and "G" (governance) aspects of our work, leveraging frameworks such as B Corp. and SASB's Human Capital work, to continue to demonstrate the link between positive impacts and investor returns.

