CORPORATE CLIMATE RESILIENCE

Building Corporate Climate Resilience:

Key Insights from the 2025 Corporate Climate Resilience Foresight Series

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C2ES

CENTER FOR CLIMATE
AND ENERGY SOLUTIONS

RESILIENCE FIRST

EXECUTIVE SUMMARY

Physical climate impacts are fundamentally reshaping the risk landscape for global businesses. Through six dialogues conducted in 2025, the Climate Resilience Foresight Series brought together leaders from two dozen companies to explore how organizations can build comprehensive resilience to climate change. This synthesis presents a strategic framework for corporate climate resilience, drawing on insights from participants across manufacturing, energy, technology, financial services, and other critical sectors.

The dialogues revealed that while awareness of climate risks has grown substantially, translating this awareness into sustained action remains challenging. Companies face genuine barriers including competing priorities, data limitations, and governance structures not designed for long-term, systemic threats. Yet leading organizations are developing innovative approaches that frame resilience as a source of competitive advantage rather than merely a cost center. As climate impacts accelerate, the companies that systematically build adaptive capacity will be best positioned to protect value, seize opportunities, and contribute to broader societal resilience.

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KEY FINDINGS

Climate resilience is fundamentally a systems challenge. Individual organizational preparedness fails when broader systems— supply chains, infrastructure, communities— remain vulnerable.

Governance structures determine resilience outcomes. Organizations that embed climate considerations into core decision-making processes, engineering standards, and strategic planning achieve more comprehensive resilience.

Heat and water emerge as universal threats. Across all sectors and geographies, extreme heat and water stress create cascading impacts on operations, workforce, finances, and communities.

External pressure accelerates action. Companies consistently report that customer requirements, investor expectations, and regulatory frameworks drive internal resource allocation and leadership attention to resilience.

Early integration yields highest returns. Embedding resilience into project design and strategic planning costs significantly less than retrofitting or responding to disruptions.

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About

Center for Climate and Energy Solutions (C2ES)

The Center for Climate and Energy Solutions (C2ES) is an independent, nonpartisan, nonprofit organization whose mission is to secure a safe and stable climate by accelerating the global transition to net-zero greenhouse gas emissions and a thriving, just, and resilient economy. C2ES works directly with businesses to identify practical, real-world solutions, namely through its Business Environmental Leadership Council, which comprise 42 mostly Fortune 500 companies across industry sectors, as well as other peer-exchange networks. Through its Corporate Climate Resilience Pathways Initiative, C2ES engages with dozens of companies to strengthen understanding and share best practices for how companies are building resilience to the physical risks and impacts of climate change.

Resilience First

Resilience First is the world's largest business network setting the standard for resilience leadership in the private sector for a safe, secure, and sustainable future. It serves as a platform for businesses to adapt, respond, and innovate in the face of converging crises and a rapidly changing world by facilitating collaboration and knowledge-sharing, and co-creating solutions. Resilience First's New Model for Organizational Resilience provides a comprehensive framework for building resilience across multiple business dimensions, requiring systemic approaches that go beyond traditional risk management.
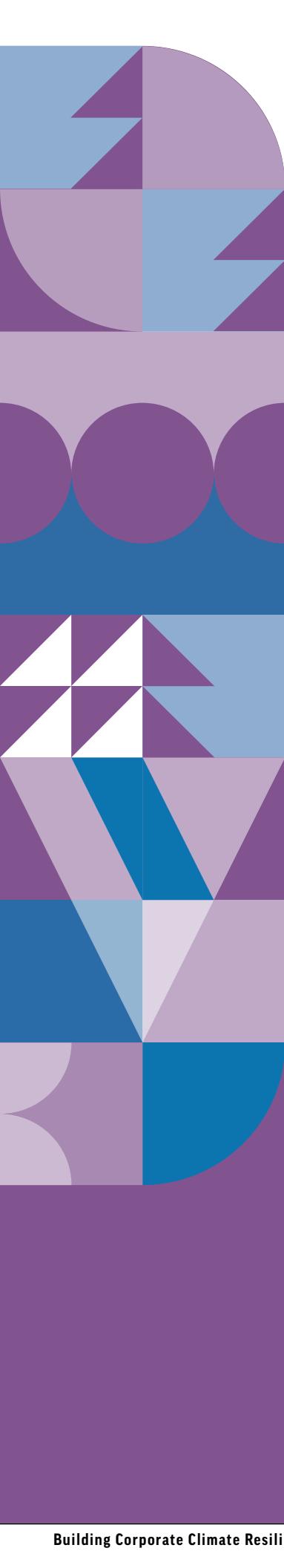
Introduction: The Business Imperative for Climate Resilience

The World Economic Forum's 2024 Global Risks Report identifies climate-related threats among the top three risks testing organizational resilience.[1] Organizational resilience can be defined as ensuring that businesses can anticipate, absorb and adapt to a changing environment while continuing to deliver value to stakeholders.[2] For global companies, physical climate impacts—from extreme heat and flooding to supply chain disruptions and workforce challenges—are no longer hypothetical scenarios but operational realities demanding a strategic response.

The Climate Resilience Foresight Series, a partnership between Resilience First, based in the United Kingdom, and the Center for Climate and Energy Solutions (C2ES), based in the United States, was designed to help large businesses navigate this evolving landscape. Through six strategic dialogues conducted between March and September 2025, the series convened senior resilience leaders from across sectors to share approaches, challenges, and emerging practices for improving organizational resilience to physical climate impacts.

The series employed Resilience First's standards-aligned Model for Organizational Resilience, which examines climate impacts across five essential dimensions:[3]

- **Environment**: Dependence on natural resources and ecosystem services
- **Infrastructure and Operations**: Built environment, supply chains, and operational continuity
- **Workforce**: Employee health, safety, and productivity
- **Finance**: Economic impacts, insurance, and investment decisions
- **Social and External Ecosystems**: Community engagement and stakeholder relationships

Using the model's measurement-driven approach to resilience, series participants first identified business and service outcomes for each dimension of their organization that would be affected by climate shocks. They then explored potential indicators that could help understand how resilient this dimension of their organization is to climate change. Finally, participants discussed initial ways they could stress test the resilience of these outcomes. **Figure 1** is an illustrative example. It posits an essential financial outcome, which resilience indicators would lead to the desired outcome, and a climate-related stress test. Additional examples of potential climate resilience are included in the Appendix.

A sixth dialogue focused on corporate governance—the critical overlay that determines how organizations integrate climate resilience across all dimensions. This governance lens revealed the organizational structures, decision-making processes, and leadership engagement that ultimately determine whether climate resilience moves from aspiration to implementation.

This synthesis distills insights gleaned from over 40 participants representing 24 organizations from different industry sectors and geographies, including food and beverage, technology, telecommunications, electric utilities, rail, chemicals and manufacturing, construction, banking, and insurance. These several insights from the series coalesce around common areas to address that would enable companies to protect value and maintain competitiveness, and, in doing so, contribute to the resilience of the communities in which they operate.

FIGURE 1: ILLUSTRATIVE EXAMPLE OF AN SME MANUFACTURER

FINANCE (Dimension)

Essential Outcome
A sufficient liquidity buffer

Resilience Indicators
- Target liquidity buffer: 9 months working capital
- Threshold liquidity buffer: >3 months working capital

Stress Test
Severe weather event damaging manufacturing facility resulting in 4 weeks lost production
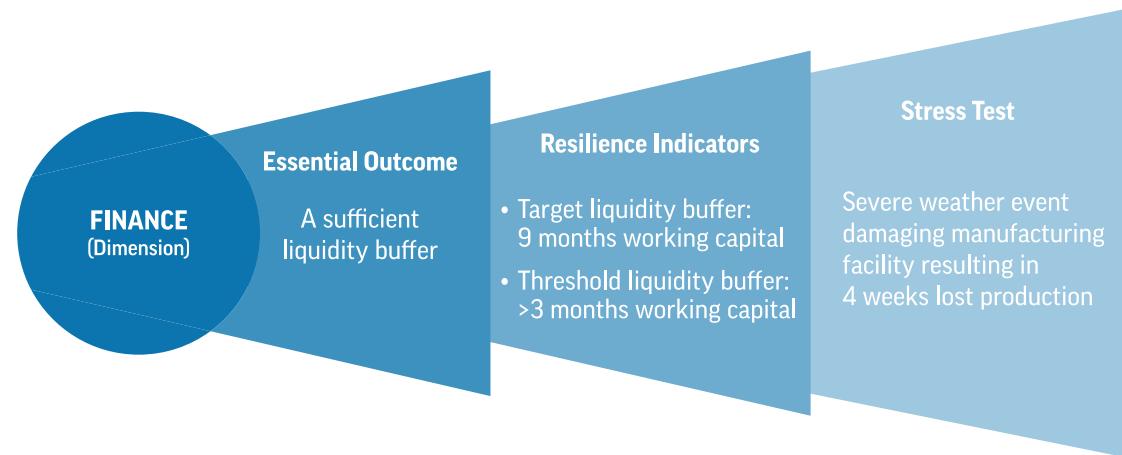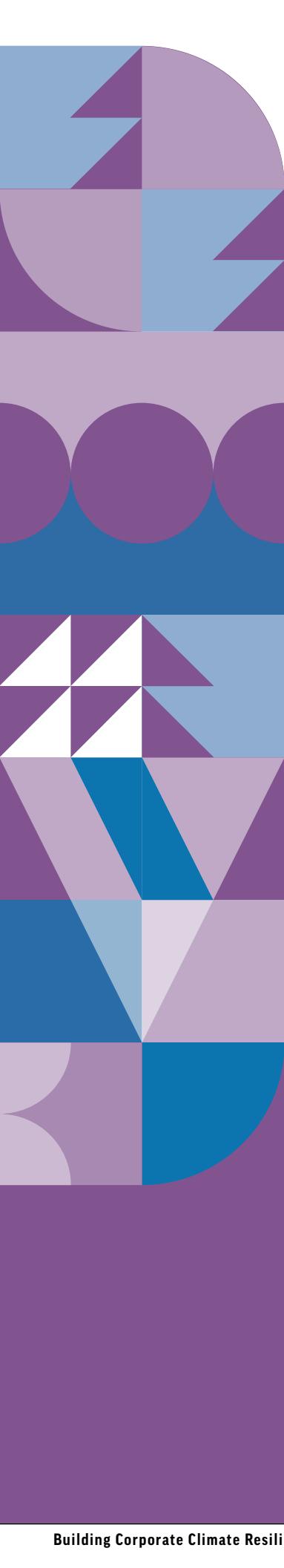
Understanding Systemic Climate Risk

The dialogues revealed a fundamental insight: climate resilience cannot be achieved alone. Companies consistently reported that their greatest vulnerabilities often lie outside their direct control—in supply chains, infrastructure systems, workforce communities, and natural ecosystems. This systemic nature of climate risk requires a corresponding evolution in how businesses approach resilience.

The Cascade Effect

Participants shared numerous examples of cascading failures triggered by climate events. A technology company described how flooding at a single supplier facility created months of production delays across multiple product lines. A major utility owner and operator reported that extreme heat not only stressed grid infrastructure but simultaneously increased demand, reduced generation efficiency, and threatened worker safety—creating compound operational challenges that individual risk assessments had failed to anticipate. Both examples show how disruptions in one business segment can have cascading effects across an organization.

These cascade effects manifest across multiple pathways:

- **Physical cascades** occur when infrastructure failures propagate through interdependent systems.
- **Economic cascades** are when financial stress transmits through supply chains and markets.
- **Social cascades** originate when community impacts affect workforce availability and productivity.
- **Regulatory cascades** stem from policy responses to climate events create new compliance requirements.

Universal Threats: Extreme Heat and Water Stress

Across all dialogues and sectors, two climate impacts emerged as universal business threats: extreme heat and water stress. These impacts transcend geographic and sectoral boundaries, affecting every dimension of organizational resilience.

Extreme heat creates multiple simultaneous challenges. Manufacturing companies reported equipment failures and reduced operational efficiency. The construction and agriculture sectors face severe constraints on outdoor work, with some regions approaching physiological limits for human labor and severe supply chain delays due to heat-ruptured transport systems. Data centers—now considered to be critical national infrastructure in many countries—and technology infrastructure require exponentially increasing cooling capacity. Financial services firms are considering how to price heat-related productivity losses into investment decisions. Notably, while many of the firms noted extreme heat challenges facing outdoor workers, many companies face challenges with lack of air conditioning in supplier facilities, often located in the Global South, that have similar impacts on workers.

Water stress—encompassing both scarcity and excess—similarly cuts across organizational boundaries. Semiconductor manufacturers described how water shortages threaten production capacity. Food and beverage companies face fundamental constraints on raw material availability. Energy utilities must balance cooling needs with environmental regulations. Real estate firms are reassessing portfolio values based on flooding risk and water availability.

The universality of these threats suggests that companies' climate adaptation strategies will prominently feature heat and water resilience. Companies that develop robust approaches to managing these risks will likely address a significant portion of their climate vulnerability while building capabilities applicable to other climate impacts.

Insurance Industry Warning on Climate Resilience and Insurability

Marsh, Zurich, and AXA

Leading global insurers are issuing urgent warnings that corporations can no longer assume ongoing insurance coverage will remain available or affordable without proactive climate resilience measures, as rising climate-related losses fundamentally threaten the viability of traditional insurance markets. Marsh McLennan's 2023 report emphasizes that without investment in adaptation and resilience, climate change may drive weather-related risks in certain regions to levels that are no longer insurable, eroding markets and shrinking profit pools—a phenomenon already evident in the Western United States due to wildfire threats and contributing to the establishment of catastrophe risk pools in vulnerable regions.[i, ii] The industry currently faces a $142 billion global protection gap, with only 46 percent of weather-related losses insured, while insured losses from natural catastrophes have more than doubled relative to global gross domestic product (GDP) since 1994. Zurich Insurance warns that the growing volatility of climate disasters demands corporations reframe their approach beyond traditional risk transfer toward risk prevention, reduction, and resilience-building strategies.[iii] AXA's 2025 Future Risks Report reinforces this message, stating that the insurance industry is undergoing one of its greatest transformations by shifting from paying claims to preventing those claims from arising, requiring a fundamental change in mindset and technology to help people better prepare for the unexpected.[iv] All three insurers emphasize that companies demonstrating measurable risk reduction through climate resilience investments—including infrastructure hardening, nature-based solutions, improved building standards, and enhanced disaster preparedness—can benefit from potentially more favorable premium pricing, maintained insurability, and protection of existing markets, while those that fail to adapt face the prospect of becoming uninsurable as climate risks accumulate and traditional underwriting models become economically unsustainable.

i   Marsh, "Insurance as a Key Catalyst for Climate Action," Marsh, October 22, 2025, *https://www.marsh.com/en/services/climate-change-adaption/insights/insurance-as-a-key-catalyst-for-climate-action.html*.

ii   Marsh McLennan, "Building a Climate Resilient Future," Marsh McLennan, 2023, *https://www.marshmclennan.com/web-assets/insights/publications/2023/december/2023-marsh-mcLennan-building-a-climate-resilient-future.pdf*.

iii Zurich, "Strategies for Building Resilience in a More Volatile World," Zurich, April 29, 2025, *https://www.zurich.com/knowledge/topics/climate-change/strategies-for-building-resilience-in-a-more-volatile-world*.

iv   AXA, "Future Risks Report 2025," AXA, October 13, 2025, *https://www.axa.com/en/press/publications/future-risks-report-2025-report*.
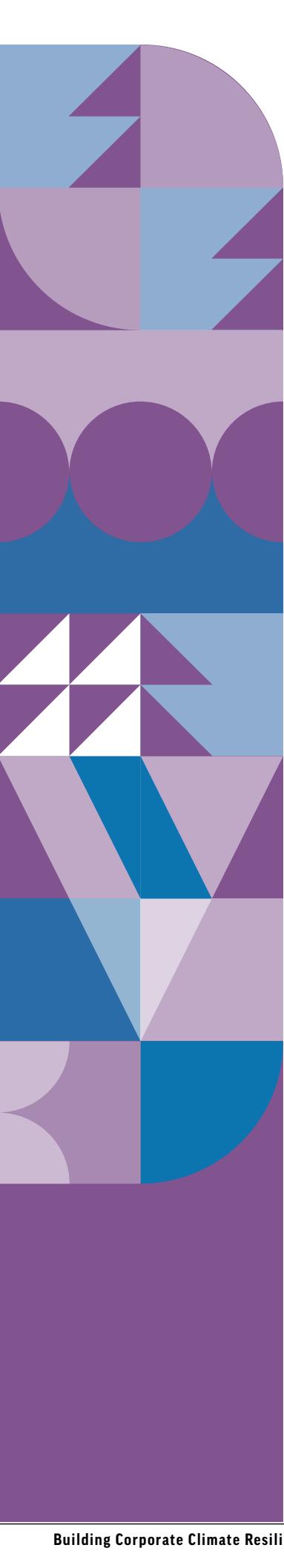
Governance as the Foundation for Resilience

The corporate governance dialogue revealed that organizational structures and decision-making processes fundamentally determine resilience outcomes. While technical solutions and financial resources are necessary, they prove insufficient without governance systems that embed climate considerations into core business processes.

The Perception-Action Gap

A striking finding from the governance dialogue was the persistent gap between risk perception and action. Survey data presented by Marsh revealed that while 60 percent of organizations feel they have sufficient resources to address climate risks, only 45 percent of resilience spending targets long-term adaptation rather than short-term continuity. This misalignment may reflect deeper governance challenges:

- **time horizon mismatches**: quarterly reporting cycles versus multi-decade climate impacts
- **accountability gaps**: unclear ownership of climate resilience across functions
- **incentive misalignment**: performance metrics that do not reward long-term resilience investments
- **risk transfer assumptions**: over-reliance on insurance despite rising costs and coverage gaps.

Organizational Models That Work

Leading companies are working internally to foster and support governance structures that embed climate resilience into decision-making. Several potential models emerged from the dialogues:

The Hub-and-Spoke Model

One large technology company employs dedicated climate teams that work across the organization to embed resilience considerations within organizational functions. These teams report to senior operational leadership—as opposed to sustainability functions, which ensures direct connection to business decision-making. Regular cadences, such as monthly steering committees and quarterly working groups, maintain momentum and accountability.

The Integrated-Board Model

One electric utility integrates climate risk across multiple board committees rather than siloing it in a single sustainability committee. This approach ensures that climate considerations inform audit, risk, compensation, and strategy discussions. While the model enables climate risk to be a core business concern with board-level oversight, such a structure still requires the board to enable decision-making on climate risk, rather than treating climate risk only as a topic of interest to be monitored.

> **Organizational structures and decision-making processes *fundamentally* determine resilience outcomes.**

The Operations-Based Model

Engineering-intensive companies have found success by embedding climate projections directly into design standards and operational procedures. One telecommunications company developed climate risk scores that became mandatory considerations for all infrastructure investments. This approach leverages existing governance mechanisms rather than creating parallel processes.

Business-Outcomes Model

One approach involves structured frameworks that measure resilience across multiple organizational dimensions. The Model for Organizational Resilience, developed through partnership between Cranfield University and Resilience First, employs five core dimensions—social, financial, workforce, infrastructure, and environment—to guide strategic planning. Organizations using this model establish Essential Outcomes to prioritize critical functions, deploy Resilience Indicators that set performance targets for both normal and severe conditions, and conduct regular stress testing to identify vulnerabilities. This framework enables companies to move beyond theoretical resilience planning toward data-driven decision-making that directly connects to business outcomes. While the model provides comprehensive structure, successful implementation requires organizations to customize indicators to their specific operational context rather than applying generic metrics.

Breaking Through Organizational Barriers

Participants identified several persistent barriers to effective climate governance and strategies for overcoming them:

Crisis Preparedness: Organizations often require a crisis to catalyze action. Some companies simulate climate disruptions through scenario planning and war gaming exercises, creating "synthetic crises" that build organizational muscle memory without actual losses.

Competing Priorities: With key issues such as artificial intelligence (AI), digital transformation, and increased energy demand competing for resources, climate resilience struggles for attention. Framing climate resilience as an enabler of other strategic priorities—protecting AI infrastructure, ensuring digital resilience—rather than a competing initiative, may garner more interest and investment from leadership.

Leadership Turnover: Executive changes can shift attention from previously supported resilience initiatives. Organizations that embed climate considerations into role transitions, succession planning, and institutional knowledge management are more likely to maintain continuity despite personnel changes.
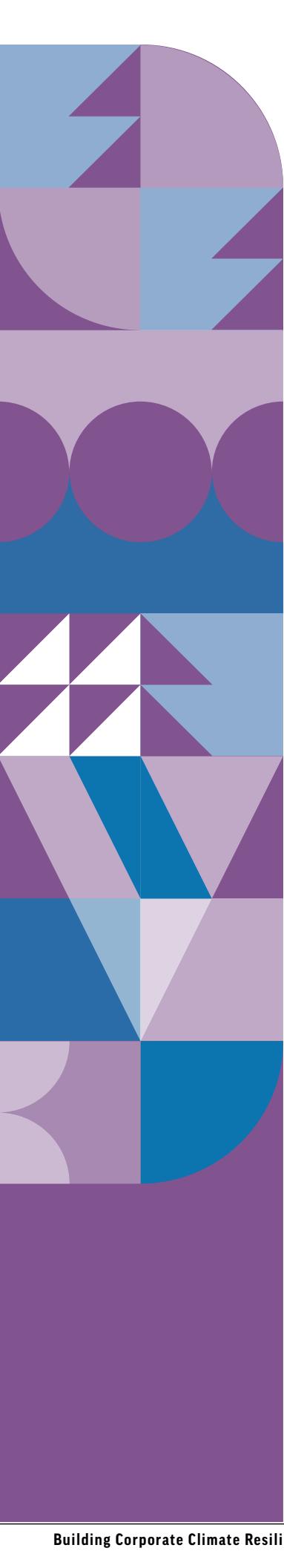
Building Resilience Across Organizational Dimensions

The dialogue series examined climate resilience through five interconnected dimensions: environment, infrastructure and operations, workforce, finance, and social and external ecosystems. Each of which revealed both dimension-specific strategies and critical interdependencies. Organizations achieving comprehensive resilience recognize that actions in one dimension create ripple effects across others.

Environment: Natural Resource Dependencies

Companies increasingly recognize that business resilience depends fundamentally on ecosystem health. Dialogue participants from agriculture, food and beverage, and manufacturing sectors described how environmental degradation directly threatens operational viability.

Key strategies include:

- **watershed governance**: collaboratively managing water resources across users
- **nature-based solutions**: building green infrastructure that provides multiple co-benefits
- **biodiversity metrics**: quantifying and managing ecosystem dependencies
- **circular economy approaches**: reducing resource intensity and waste.

A food and agriculture company shared how investing in watershed restoration not only secured water supplies but also strengthened community relationships and reduced regulatory risk. However, participants noted that most environmental initiatives remain reactive—responding to degradation rather than proactively building ecosystem resilience. A proactive approach is optimal because then companies can mitigate the causes of climate change while building resilience to the impacts that are locked in.

Infrastructure and Operations: From owned assets to supply chains

Infrastructure adaptation represents the most tangible aspect of climate resilience for many companies. While participants described substantial investments in physical hardening (e.g., flood barriers and enhanced cooling systems), the dialogue revealed that effective infrastructure resilience extends beyond physical assets. It encompasses supply chains, logistics networks, and operational flexibility.

Key strategies include:

- **climate-informed design standards**: forward-looking specifications for all new infrastructure
- **distributed operations**: geographic diversification to reduce concentration risk
- **adaptive capacity**: flexible systems that can adjust to changing conditions
- **digital twins**: virtual modeling to test resilience strategies.

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Organizations achieving comprehensive resilience recognize that *actions in one dimension create ripple effects across others.*

One electric utility's multi-billion dollar investment in grid hardening exemplifies the scale of infrastructure adaptation required. However, the company emphasized that physical hardening alone proves insufficient—operational changes, predictive maintenance, and community coordination are equally critical.

Workforce: Human Capital Resilience

Climate impacts on workforce productivity, health, and safety emerged as a critical concern across sectors. Companies are expanding beyond traditional occupational safety to address heat stress, climate anxiety, and community disruption affecting employees.

Key strategies include:

- **heat management protocols**: implementing work-rest cycles, cooling stations, and schedule adjustments
- **mental health support**: addressing climate-related stress and anxiety
- **community resilience programs**: supporting employee home and family preparedness
- **skills development**: training for new climate-adapted operational procedures.

Construction and utility companies reported that extreme heat is already constraining work schedules, with some regions experiencing 20–30 percent productivity losses during summer months. While addressing the human dimension of climate resilience presents new challenges, enabling workforce health and productivity can also provide the most tangible and immediate benefits.

Finance: Economic Implications and Opportunities

Making the business case for resilience investments remains challenging, yet participants identified multiple pathways for demonstrating value, such as through expanding analysis beyond cost avoidance to capture revenue protection, competitive advantage, lower future debt and costs, and additional value.

Key strategies include:

- **resilience-linked financing**: prioritizing loans and bonds with climate adaptation requirements
- **parametric insurance**: purchasing coverage triggered by specific climate thresholds
- **internal pricing mechanisms**: incorporating climate costs into investment decisions
- **stranded asset assessment**: identifying assets at risk from chronic climate changes

Insurance sector representatives warned that assuming continued coverage availability is increasingly risky. Some companies—such as one large tech company who participated in the dialogues—are already preparing for conditions where some risks become uninsurable, requiring greater self-insurance and risk retention.

Social and External Ecosystems: Stakeholder Interdependencies

Climate resilience cannot be achieved in isolation. Communities, suppliers, and other stakeholders are also key to ensuring long-term climate resilience. Participants emphasized that organizational resilience depends on the resilience of the broader communities, as well as of the infrastructure and social systems in which they all operate.

Key strategies include:

- **supplier capability building**: supporting adaptation throughout value chains
- **community investment**: strengthening local infrastructure and services
- **multi-stakeholder initiatives**: developing collaborative approaches to systemic risks
- **public-private partnerships**: leveraging combined resources and expertise

One technology company's approach of embedding resilience requirements into supplier contracts demonstrates how large purchasers can drive adaptation throughout value chains. However, smaller suppliers often lack resources and expertise, requiring capability-building support to be able to comply with new requirements.
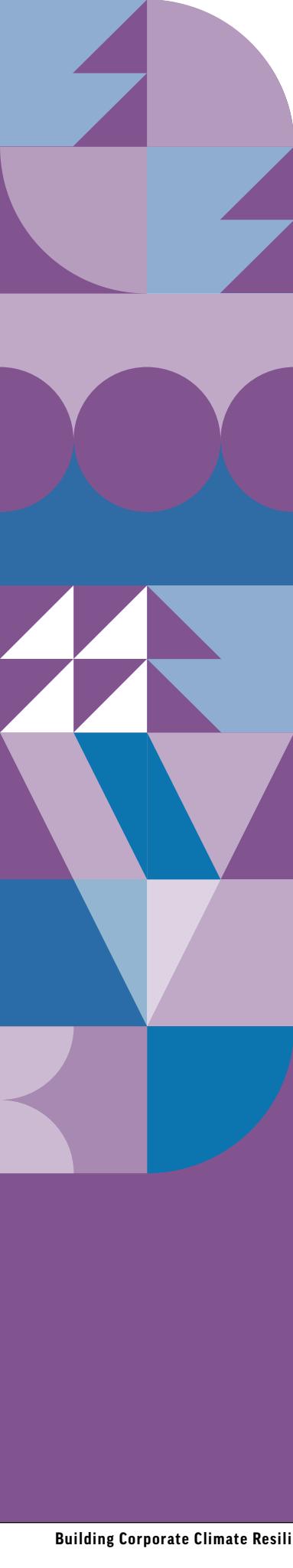
Data, Tools, and Measurement

A consistent theme across all dialogues was the challenge of obtaining actionable climate data and developing meaningful resilience metrics. While climate science has advanced substantially, translating projections into business-relevant information remains difficult.

The Data Challenge

Companies face multiple data-related challenges:

- **Scale mismatches**: Climate models operate at resolutions that are not detailed or granular enough for site-specific decisions.
- **Uncertainty ranges**: Wide ranges in the potential for climate-related impacts complicate investment decisions.
- **Historical bias**: Past data no longer predicts future conditions.
- **Integration gaps**: Firms have difficulty combining climate, operational, and financial data.

Participants emphasized the importance of taking action and not letting the lack of perfect, granular data hinder or constrain decision making. Companies making progress on resilience have learned to act on directional insights while continuing to refine their data and models.

Emerging Tools and Approaches

Despite challenges, new tools and methodologies are enhancing climate risk assessment:

- **AI and machine learning**: pattern recognition and predictive modeling
- **geospatial analytics**: high-resolution mapping of climate hazards
- **digital twins**: virtual replicas for testing resilience strategies
- **scenario analysis platforms**: tools for exploring multiple climate futures.

Several companies described success with "climate risk scores." These are simplified metrics that translate complex climate data into actionable decision tools. One large telecommunications provider integrated climate scores into all infrastructure planning, exemplifying this approach.

Metrics That Matter

Organizations struggle to define and measure resilience in ways that resonate with leadership and stakeholders. Even with the use of resilience models that identify business outcomes and resilience indicators, turning these metrics into business decisions is a challenge.

Effective metrics share several characteristics. They are:

- **business-relevant**: connected to operational and financial performance
- **leading indicators**: predictive rather than just historical
- **actionable**: clear implications for decision-making
- **comparable**: enable benchmarking and peer learning

Examples of metrics that companies are beginning to develop include: days of operation lost to climate events, percentage of critical assets with resilience plans, heat-related safety incidents, water intensity per unit of production, and percentage of suppliers with climate assessments. See the Appendix for examples of additional metrics.
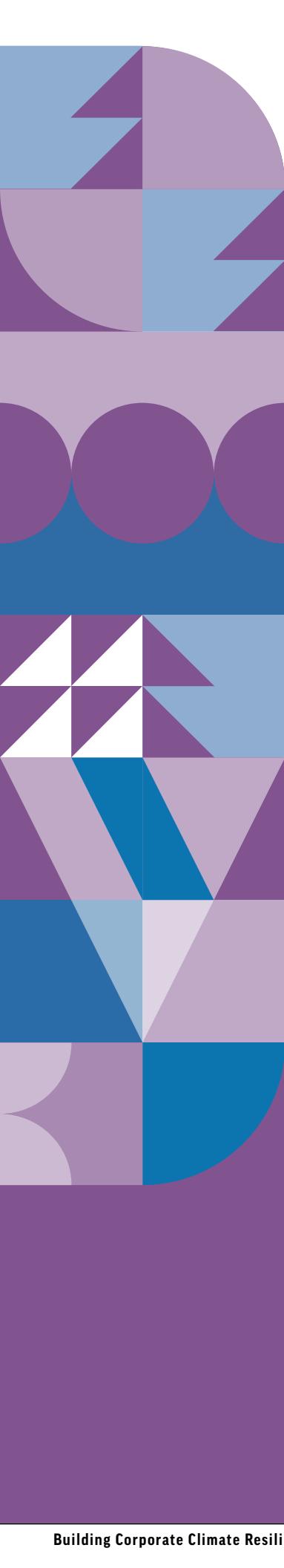
Communication and Stakeholder Engagement

Effective communication about climate resilience—both internal and external—emerged as a critical success factor. Companies must navigate diverse stakeholder perspectives, from executives to local community leaders, requiring targeted messaging strategies.

Internal Communication Strategies

Participants shared successful approaches for building internal support:

Audience-specific framing: Engineers respond to technical risk assessments, finance teams to ROI calculations, and operations to continuity impacts. Successful climate champions learn to translate resilience into each function's "language."

Concrete over abstract: "The transformer failed three times last summer" resonates more than climate projections. Companies should anchor discussions in observed impacts and near-term consequences.

Positive positioning: Framing resilience as competitive advantage, innovation catalyst, and growth enabler proves more effective than risk-focused messaging alone.

Peer comparisons: "Our competitors are doing X" creates powerful motivation. Several participants emphasized that sharing what peers are doing helps convince leadership to act.

External Stakeholder Pressure as Catalyst

A surprising consensus emerged from the dialogues: companies seek more external pressure on climate resilience. Participants consistently reported that customer requirements, investor expectations, and regulatory frameworks provide essential leverage for securing internal resources and attention.

Key external drivers include:

- **customer requirements**: supply chain resilience standards and contract provisions
- **investor engagement**: questions at annual meetings and ESG assessments
- **regulatory frameworks**: disclosure requirements and resilience standards
- **industry initiatives**: sector-specific collaborations and standards
- **insurance requirements**: risk engineering and loss prevention mandates.

This desire for external pressure reflects the difficulty of maintaining momentum on long-term challenges within short-term oriented business cultures. External requirements provide an important impetus needed to justify resilience investments that may not deliver returns on investment within typical planning horizons.
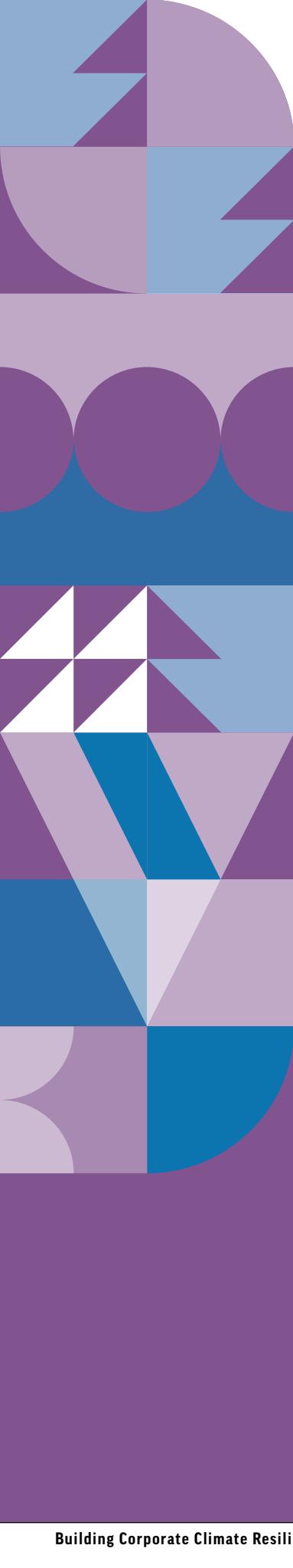
Proposed Strategies to Advance Corporate Climate Resilience

Based on insights from across the dialogue series, several proposed strategies emerge for companies seeking to build comprehensive climate resilience. These proposed strategies reflect how some leading companies are beginning to address the common barriers identified throughout the discussions and where new efforts are needed to scale climate resilience across all organizational dimensions.

Near-Term Actions (~0–2 Years)

1. Conduct Systemic Risk Assessment

Move beyond facility-level analysis to examine cascading risks through supply chains, infrastructure dependencies, and community impacts. Include heat and water stress as foundational elements.

2. Embed Climate Risk into Engineering Protocols and Capital Expenditures for Infrastructure

Update design specifications, operational procedures, and maintenance protocols to reflect climate projections, rather than historical conditions. Make climate considerations mandatory for all capital projects.

3. Develop Climate Risk Scores

Create simplified metrics that translate complex climate data into decision-useful information connected to essential business outcomes. Integrate these scores into existing risk management and investment processes.

4. Launch Pilot Projects

Implement visible, low-cost resilience measures that demonstrate value and build organizational confidence. Use success stories to build momentum for larger investments.

5. Strengthen Governance Structure

Clarify ownership of climate resilience, establish regular reporting cadences, and ensure direct connection to operational decision-making rather than siloing it in sustainability functions.

Medium-Term Priorities (~2–5 Years)

1. Build Internal Adaptive Capacity

Invest in flexible systems and processes that can adjust to changing conditions rather than designing for single scenarios.

2. Develop Supply Chain Resilience

Map critical dependencies, assess supply vulnerabilities, and build collaborative relationships for mutual resilience.

3. Implement Workforce Adaptation

Develop comprehensive heat management protocols, enhance mental health support, and invest in community resilience that protects employee wellbeing outside the workplace.

4. Explore Innovative Risk Transfer & Changes to the Insurance Market

Investigate parametric insurance, catastrophe bonds, and other alternative risk transfer mechanisms. Prepare for potential insurance market disruption and changes for 'insurability'.

5. Engage External Stakeholders to Build Climate Resilience

Participate in industry initiatives, support community adaptation, advocate for enabling policy frameworks, and build coalitions for addressing systemic risks.

Long-Term Transformation (~5+ Years)

1. Redesign Business Models

Invest in changes to products, services, and markets in response to chronic climate changes. Identify new opportunities in adaptation and resilience markets.

2. Invest in Natural Infrastructure

Develop nature-based solutions that provide multiple benefits including greenhouse gas emissions reductions, improved land and water use, and community wellbeing. Move beyond minimizing harm to actively rebuilding natural and social capital. Align business success with ecosystem health.

3. Pioneer New Protocols and Standards

Contribute to developing industry resilience standards and best practices. Doing so can also shape regulatory frameworks that require disclosure of financial-related climate risk.

4. Build and Support Learning Networks

Establish mechanisms for continuous learning and adaptation within and across companies. Create internal, cross-departmental knowledge sharing forums that improve resilience strategies based on experience and participate in inter-organizational forums to learn from other sectors.

Applying Lessons from the COVID-19 Pandemic to Climate Resilience

Throughout the dialogues, companies referred to lessons from the COVID-19 pandemic, which provided a real-world test of organizational resilience, and where organizations demonstrated that they possess remarkable capacity for rapid transformation when necessity demands it. Within weeks, companies overhauled operations, deployed digital tools at unprecedented scale, enhanced supply chain visibility, and adapted workforces to new operating models. Organizations with existing scenario plans proved more agile, validating that general preparedness frameworks could also be directly relevant to climate resilience.

However, pandemic experience also reveals potential impediments. Success navigating COVID-19 may lead organizations to overestimate existing capabilities for future challenges, while prior failure could reinforce fatalistic views. Organizational exhaustion from prolonged crisis response may have reduced appetite for preparing for new disruptions precisely when sustained adaptation is most needed.

Effective organizations recognize differences between pandemic response and climate adaptation. Climate impacts are predictable in direction, requiring sustained strategic effort and long-term planning rather than rapid emergency response. The pandemic's most valuable lesson is that transformative change is possible when organizations recognize necessity. The challenge is creating that sense of necessity and urgency before catastrophic climate impacts force reactive responses. Companies must translate proven capacity for rapid adaptation into sustained, proactive transformation.
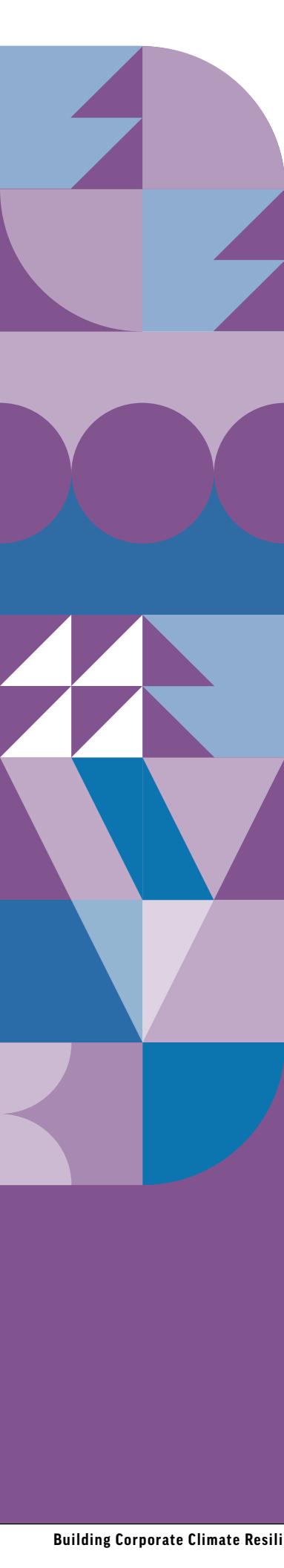
Recommendations for Business Leaders

Throughout the dialogues, participants shared insights on how different roles within companies can help advance climate resilience across all business dimensions. Most insights corroborated best practices from other recent publications examining how businesses leaders can strengthen climate resilience, including the World Business Council for Sustainable Development's (WBCSD) Business Leader's Guide to Adaptation and Resilience,[4] WBCSD's Physical Risk and Resilience in Value Chains: CEO Handbook on Executive Engagement,[5] and the World Economic Forum's The Cost of Inaction: A CEO Guide to Navigating Climate Risk.[6]

Based on discussions among dialogue participants, the following key actions will help integrate resilience across all business units, build the value proposition for investing in resilience, and develop greater accountability and ownership at the executive and unit level for advancing climate resilience.

For Executive Leadership

- Frame resilience as a competitive advantage and contributing to the ongoing strength and health of the business, rather than as a compliance burden.
- Integrate climate considerations in all major investment decisions.
- Create clearer accountability across business units for resilience outcomes.
- Invest in no-regrets actions that provide value regardless of specific climate scenarios.
- Communicate commitment internally and externally to build momentum.

For Risk Managers

- Expand beyond acute risks to address chronic climate changes.
- Develop forward-looking indicators rather than relying on historical data.
- Map cascading impacts through systems and supply chains.
- Prepare for insurance market disruption and potential coverage gaps.
- Integrate climate into enterprise risk management frameworks (ERM) frameworks rather than treating separately.

For Operations Leaders

- Update engineering standards for future climate conditions.
- Build flexibility and optionality into infrastructure investments.
- Prioritize heat and water resilience as foundational capabilities.
- Develop operational workarounds for climate disruptions.
- Track climate impacts on productivity and maintenance costs.

For Sustainability Leaders

- Connect resilience to strategy and business model, not just environmental goals.
- Build bridges to operations and finance functions.
- Develop business-relevant metrics that resonate with leadership.
- Leverage external pressure from stakeholders to drive internal action.
- Share success stories to build momentum and confidence.

For Board Members

- Request regular climate risk briefings with business impact quantification and resilience metrics.
- Ensure climate competence in board composition.
- Challenge short-term thinking that undermines long-term resilience.
- Support investments with longer-term payback periods.
- Hold management accountable for resilience outcomes.

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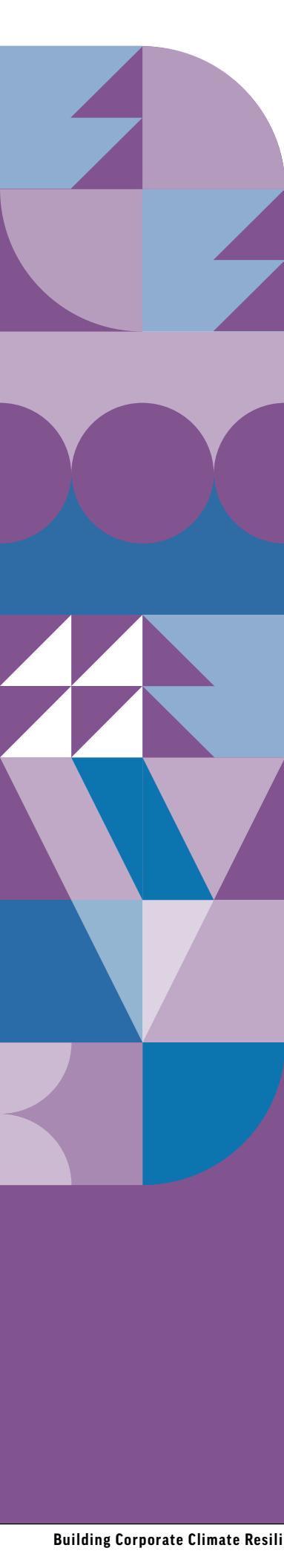
Conclusion

The transition from climate awareness to action requires fundamental shifts in how organizations perceive and manage risk. It necessitates a governance structure that balance short-term pressures with long-term imperatives, new forms of collaboration that recognize the systemic nature of climate threats, and calls for leadership that frames resilience as an investment in sustainable business success.

The dialogues revealed that leading companies are taking action to build resilience to a changing climate. They are developing innovative approaches that deliver multiple benefits across business dimensions; engaging in partnerships to address systemic risks beyond individual organizational boundaries; and exploring where climate resilience can drive innovation, strengthen stakeholder relationships, and create new sources of competitive advantage.

Companies face genuine barriers to building resilience, including data limitations, governance challenges, and the difficulty of justifying long-term investments in short-term-oriented business cultures. The systemic nature of climate risk means that individual organizational resilience, while necessary, is insufficient. Success requires coordinated action across businesses, governments, and civil society. Companies that act decisively now by embedding resilience into strategy, operations, and culture will be best positioned to navigate the disruptions ahead.

Three key enablers affect pace and scale of building corporate climate resilience:

- external pressure from investors, customers, regulators, and communities that makes resilience a business imperative rather than an option
- collaborative platforms that enable peer learning, resource sharing, and coordinated responses to systemic risks
- practical tools and frameworks that translate climate science into business-relevant information and decision support.

While climate change presents a substantial risk to companies, those that transform risk into opportunity and begin to build resilience across all organizational dimensions will be positioned to thrive in the climate-altered economy going forward.

Appendix

In advance of each dialogue session of the program, Resilience First generated examples of climate resilience metrics and indicators across each dimension of an organization (see **Table A1**). The following metrics are intended to serve as a starting point for further discussion.

TABLE A1: COMPREHENSIVE SAMPLE OF RESILIENCE METRICS

Dimension	Metric	Description
Natural Environment	Water Usage and Efficiency	Amount of water used and efficiency in operations.
Infrastructure and Operations	Recovery Time	The time required to restore operations after a disruption due to extreme weather or other climate-related events
	System Redundancy	Availability of backup systems and alternative infrastructure to maintain operations in case of failures.
Workforce	Remote Work	Capability Proportion of roles and infrastructure enabling remote work during climate disruptions.
	Workforce Continuity Plans	Existence and effectiveness of plans to maintain staffing levels and critical operations during climate events.
Finance	Business Interruption Cost	Historical or modelled financial losses due to climate-related service disruptions or supply chain breakdowns.
	Climate Risk Exposure (Assets at Risk)	Value or percentage of assets located in climate-vulnerable areas (e.g., flood zones, wildfire-prone regions).
Social	Community Engagement in Climate Planning	Level of local community participation in resilience planning and decision-making processes.
	Climate-Related Displacement	Support Policies and programs in place to assist employees or community members displaced by climate events (e.g., floods, fires).

Case Studies

Climate Resilience and Adaptation Study

Duke Energy

Duke Energy's December 2024 Climate Resilience and Adaptation Study represents an industry-leading comprehensive enterprise-wide assessment of climate vulnerabilities across its six-state service territory, encompassing transmission and distribution infrastructure, generation assets, and natural gas operations serving 8.4 million customers. Recognized by the Edison Electric Institute (EEI) as a finalist for its 97th Edison Award, EEI called the study a "... science-based approach to resilience and grid reliability" and a "...blueprint for industry-wide collaboration, innovation, and readiness in the face of increasingly severe weather events." Building on a 2023 Carolinas-focused analysis, the study evaluated physical climate risks through 2050 using climate scenarios from the Intergovernmental Panel on Climate Change (IPCC), identifying extreme heat and flooding as the greatest concerns for existing assets without adaptation investments. The vulnerability assessment found that extreme heat could impact cooling water reservoir operating limits at generation facilities, and flooding could potentially restrict plant operations. It also found that transmission and distribution assets face increased risks from extreme heat as well as precipitation, wind events, and coastal flooding driven by sea level rise and more intense hurricanes.

In response to these projected climate hazards, Duke Energy is implementing a multi-layered adaptation framework that includes both immediate infrastructure hardening and forward-looking design standards. Current investments include deploying self-healing smart grid technology that avoided 1.5 million customer outages in 2023, installing permanent and temporary flood protection systems at substations, implementing targeted undergrounding of vulnerable distribution lines, and upgrading transmission structures with climate-resilient designs such as high-temperature, low-sag conductors. The company was conditionally awarded $57 million in federal funding for an innovative North Carolina transmission rebuild project that incorporates climate-adaptive infrastructure. These resilience investments complement Duke Energy's decarbonization strategy, which targets net-zero carbon emissions by 2050 and addresses unprecedented load growth from data centers, manufacturing, and artificial intelligence.

Resources:

- *Climate Resilience and Adaptation Website*[7]
- *December 2024 Duke Energy Climate Resilience and Adaptation Study*[8]

Climate Resilience in Agricultural Supply Chains and Community Water Stress

Danone

Danone's approach to building climate resilience in its agricultural supply chains recognizes that 89 percent of the company's water footprint stems from agricultural ingredients, making sustainable farming practices critical to long-term supply chain security. Through its regenerative agriculture program, Danone works directly with farmers in water-stressed regions to implement solutions like sustainable irrigation techniques, enhanced rainfed practices, and decision-support systems for continuous improvement. The company has committed that by 2030, 50 percent of key raw material volumes sourced from water-risk areas will be produced under improved water management. Notable initiatives include the H'lib Bladi project in Morocco, where Danone works with smallholder dairy farmers to implement more resilient production systems through improved feed management and water access in drought-prone regions. The program has supported 6,575 farmers since 2016, with pilot farms demonstrating potential yield increases of 16 percent . Additional examples include partnerships in Spain promoting rainfed almond cultivation as a less water-intensive alternative to irrigation. These interventions utilize a landscape approach that addresses environmental, social, and economic objectives simultaneously.

Danone's resilience strategy combines watershed-level interventions both in its direct operations sites and in populations facing water stress. A key part of this effort is the SPRING (Sustainable Protection and Resource Managing) methodology, which has undergone rigorous review by leading organizations. SPRING serves as Danone's stewardship methodology: a toolbox designed to empower teams at operational sites to drive local water resilience. This methodology enables the creation of factory-specific water-action roadmaps that include resource management, water efficiency (circularity and wastewater reclamation), and watershed protection.

The company has committed to implementing watershed preservation and restoration plans for 100 percent of production sites in high water-stress areas by 2030, engaging local stakeholders through transparent governance models. Successful examples include the Rejoso Kita initiative in Indonesia, where a multi-stakeholder collaboration from 2016 to 2022 improved water efficiency by 30 percent in paddy fields while increasing farmer productivity by 50 percent, benefiting 1.6 million watershed users and resulting in the creation of a Multi-stakeholders Watershed Forum to coordinate continued preservation efforts. In Mexico, watershed projects focus on nature-based solutions, including upstream forest maintenance with wood dams to reduce erosion. These initiatives also emphasize water efficiency in agricultural irrigation, achieving 54 percent savings in water compared to the 2019 baseline, and enhanced community engagement to protect water resources.

Beyond operational watersheds, Danone targets to provide safe drinking water access to 20 million people by 2025 through social enterprises supported by the Danone Communities fund and Water Access Acceleration Fund. These initiatives deploy decentralized water treatment plants and affordable household filtration systems in regions with contaminated water sources, reaching 20.8 million people in 2024. In Indonesia, partnerships with the social enterprise Nazava provided water filters to 1,640 schools serving 76,000 children in 2024. In India, Naandi Community Water Services operates 522 water kiosks, delivering safe drinking water to 592,000 people every day in underserved communities as of 2024.

Learn More: *Danone Water Policy 2024*[9]

Heat Stress Study on Construction Workers

Turner Construction

Turner Construction, in partnership with researchers from the University of New Mexico, Indiana University, and La Isla Network, conducted a groundbreaking heat pilot study in 2023 at a large data center project in Kansas City to understand the physiological effects of heat exposure on construction workers. As the first detailed investigation to measure internal core body temperatures of U.S. construction workers during actual job site conditions, the research monitored 33 workers throughout a full summer workday using wearable sensors and ingestible data collection devices that tracked core body temperature continuously for 24 hours. The researchers also collected heart rate data, hydration levels, and workers' self-reported perceptions of heat and fatigue, creating the most comprehensive real-time dataset on heat stress in the American construction industry to date. This pilot phase represented Turner's commitment to protect workforce health and industry continuity.

The study revealed that forty-three percent of workers experienced peak core body temperatures exceeding 100.4 degrees F, with 4 percent surpassing 101.3 degrees F, even under conditions cooler than typical summer heat. Over 60 percent of workers arrived at the job site already dehydrated, despite the company implementing early shift start times to avoid peak heat exposure. These findings led Turner to reinforce direct outreach emphasizing pre-shift hydration, regular rest breaks, and enhanced worker communication. The study has expanded to collect vitals from 200 workers with comprehensive ambient condition data, with full analysis underway by University of New Mexico and Indiana University researchers, positioning Turner as a leader in developing evidence-based heat safety protocols for the construction industry.

Learn More:

- *C2ES Case Study*[10]
- *Heat Stress Blog on Turner Research*[11]
- *Turner Construction Insights*[12]
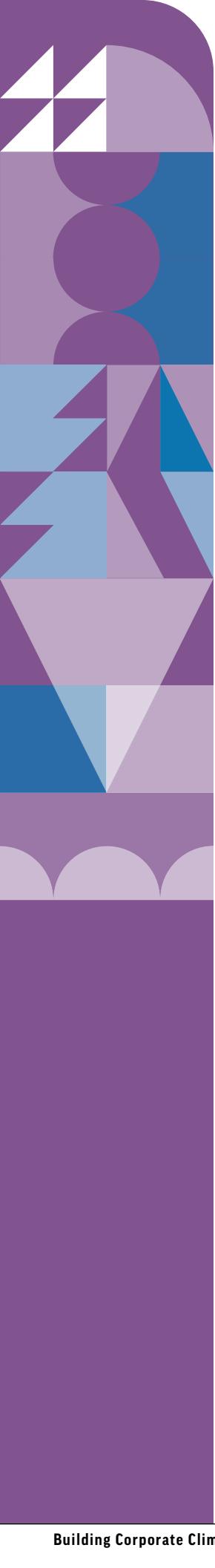
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