



# TCFD Report for 2022

## What is this report?

The Task Force on Climate-related Financial Disclosures (TCFD) was established by the Financial Stability Board (an international body that monitors and makes recommendations about the global financial system) in 2015. The Financial Stability Board created the TCFD to develop recommendations for disclosure that would support investors, lenders and insurance underwriters in appropriately assessing and pricing risks related to climate change. In 2017, the Task Force released their recommendations, creating a framework companies may use for assessment and reporting. This is Lightning eMotors' Task Force on Climate-related Financial Disclosures (TCFD) Report.

## A message from the CEO

“As a leader in the electric vehicle industry, we understand the crucial role that transparency and disclosure play in building trust and confidence with our stakeholders. That is why we are committed to following the TCFD recommendations and to providing comprehensive and meaningful information on our climate-related risks and opportunities. Our goal is to ensure that all of our stakeholders, from investors to customers to employees, have the information they need to make informed decisions about our company and the impact of our business on the environment.

Electric vehicles represent an important part of the solution to the global challenge of climate change, and it is our responsibility to be transparent about our own impact. By following the TCFD guidelines, we aim to provide our stakeholders with a clear picture of the risks and opportunities that we face as a company, as well as the actions we are taking to address them. We believe that by disclosing this information, we will not only meet the expectations of our stakeholders but also demonstrate our commitment to sustainability and long-term growth.”



Tim Reeser  
CEO and Co-Founder

## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

The discussions in this “TCFD Report for 2022” contain forward-looking statements reflecting our current expectations that involve risks and uncertainties. These forward-looking statements include, but are not limited to, statements concerning expectations and other forward looking statements relating to our business, supply chain constraints, our strategy, competition, future operations and production capacity, future financial position, future revenues, projected costs, results of operations, profitability, cost reductions, capital adequacy, demand and acceptance for our technologies, growth opportunities and trends in the market in which we operate, and other prospects, plans and objectives of management. The words “anticipate,” “believe,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “project,” “will,” “would” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements that we make. These forward-looking statements involve risks and uncertainties that could cause our actual results to differ materially from those in the forward-looking statements, including, without limitation, the risks set forth in Part I, Item 1A, “Risk Factors” in our annual report on Form 10-K and our other filings with the Securities and Exchange Commission. We do not assume any obligation to update any forward-looking statements, except as required by law. As used in this “TCFD Report for 2022”, unless otherwise stated or the context requires otherwise, references to “Lightning,” the “Company,” “we,” “us,” and “our,” refer to Lightning eMotors, Inc. and its consolidated subsidiaries.

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## Governance

### A. Describe the board's oversight of climate-related risks and opportunities.

Lightning eMotors' board of directors is responsible for overseeing Lightning's strategy, budget, and risk management. The board's Nominating and Corporate Governance Committee oversees and provides guidance around Lightning's sustainability strategy and climate risk management. The Nominating and Corporate Governance Committee assists the board with setting strategies with respect to governance, safety, and environmental policies. Members of the Nominating and Corporate Governance Committee are independent and possess a range of experience, including in the automotive industry, manufacturing, operations, fleet management and supply chain management.

### B. Describe management's role in assessing and managing climate-related risks and opportunities.

The CEO and co-founder of Lightning eMotors is responsible for executing Lightning's strategy, including planning, and overseeing research and development, manufacturing, and operations. As a Vice President of Colorado State University's (CSU) Ventures from 2009 through 2012, the CEO gained valuable experience with innovative, cleantech and technology-driven enterprises. The CEO, executives and senior management meet weekly.

In addition, in 2022, Lightning's management formed an Environmental, Social and Governance (ESG) Core Team to assist with and advise on specific disclosures related to environmental, social topics and governance matters. The ESG Core Team recommends ways to integrate environmental and climate related policies into Lightning's overall business strategy. The group is a catalyst for environmental actions beyond compliance within the company. The ESG Core Team directs the development of environmental sustainability planning, policies, and reporting. It has a broad focus and includes stakeholders from many functional areas at Lightning eMotors. The inclusion of these different functional areas ensures that all aspects of the environment and relevant areas of Lightning's business are considered, and that relevant data is collected and reported that informs decision making. Notable members of the team include the Chief Manufacturing Officer, the Vice President of Investor Relations, the Vice President of Marketing and Sales Operations and the Senior Vice President of Supply Chain and Logistics.

The ESG Core Team meets bi-weekly and reports progress frequently to executive leadership, the Nominating and Corporate Governance Committee, and the full board of directors. The ESG Core Team also monitors risks and opportunities present in Lightning's operations through reports from the VPs of Marketing and Sales Operations, Supply Chain, and Product Management and OEM Partnerships.

## Strategy

### A. Describe the climate-related risks and opportunities the company has identified over the short, medium, and long term.

The ESG Team segmented and assessed risks and opportunities from the report year of 2022 until 2025, then in 5-year increments, from 2025 to 2040. As an early-stage company with a limited operating history, our medium-term risks are considered to begin in 2025, and our long-term risks are from 2030 onward. The risks and opportunities we identified in the short term tended to intensify over time and differed in their increase under our two different scenarios. The risks and opportunities most pertinent to Lightning are further detailed below. Those in bold were chosen by the core team for detailed assessment, management, and mitigation.

#### Risk heatmap table

Risk category	2°C or lower				3.0°C +			
	2025	2030	2035	2040	2025	2030	2035	2040
<b>Physical risks</b>								
Extreme weather affecting supply chains	Low	Low	Low	Medium	Low	Low	Medium	High
Extreme weather damaging facility	Low	Low	Low	Low	Low	Low	Low	Medium
Extreme weather affecting insurance premiums	Low	Low	Medium	Medium	Low	Medium	High	High
<b>Transition risks</b>								
<b>Uncertain supply and increased cost and competition for raw materials, components</b>	Medium	High	High	Very high	Medium	High	High	Very high
Increased cost of experienced labor	Low	Medium	Medium	High	Low	Medium	Medium	Medium
Mandated price for Emissions, greater ESG scrutiny/consumer preference	Low	Low	Low	Medium	Low	Low	Low	Medium
<b>Rapid and uncertain technology development</b>	Medium	High	High	Very high	Medium	Medium	High	High
<b>Increased market competition / consolidation</b>	High	High	Very high	Very high	High	High	High	Very high

Legend: Low Medium High Very high

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## Opportunity heatmap table

Opportunity category	2°C or lower				3.0°C +			
	2025	2030	2035	2040	2025	2030	2035	2040
<b>Internal</b>								
Use of more efficient modes of transport	Medium	High	High	High	Medium	Medium	High	High
Use of more efficient production and distribution processes, leading to cost savings and lower prices for LeM	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Use of lower emissions sources of energy → cleaner EVs and lower energy costs for LeM	Medium	High	High	High	Medium	Medium	High	High
Supportive policy incentives (on the supply and operations side)	Medium	High	High	High	Medium	Medium	High	High
Participation in the carbon market. LeM’s mitigated emissions may be sellable as carbon credits, if the grid is clean enough	Medium	Medium	High	High	Medium	Medium	High	High
<b>External</b>								
Development/expansion of low-emission goods & services: EVaas, MBVC, charging stations, better grids	High	High	High	Very high	High	High	High	High
<b>Shift in consumer preference toward ZEVs</b>	Very high	Very high	Very high	Very high	High	High	High	High
<b>Expected market growth of ZEV and ancillary technologies</b>	Very high	Very high	Very high	Very high	High	High	High	High
Access to new markets: (other countries, new models, new applications)	Medium	Medium	High	High	Medium	Medium	High	High
<b>Increase in public incentives</b>	High	High	High	High	High	High	High	High
Participation in renewable energy programs and adoption of energy efficiency measures	High	High	High	High	High	High	High	High
Technological progress that LeM can take advantage of	Medium	Medium	High	High	Medium	Medium	High	High
<b>Increased investor interest and activity</b>	High	High	High	High	High	High	High	High
<b>Technology, accelerating build-out of charging infrastructure</b>	High	High	High	High	High	High	High	High
<b>Political and consumer pressure on businesses to be climate neutral</b>	High	High	High	High	High	High	High	High

Legend: Very high High Medium Low

## Top Transition Risks

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### 1. Risk type: Rapid technological development

**Primary potential avenues of financial impact:** Revenues and costs, R&D expenses

**Description:** Rapid and uncertain technological development and adoption resulting from increased consumer interest, government incentives, etc., could cause a proliferation of zero-emission vehicle (ZEV) technologies. While Lightning also sees this trend towards electric vehicles as an opportunity for growth and expects to benefit from it, Lightning will need to keep pace with the rapid advancement of electrification technologies and ensure that its ZEVs meet customer requirements. Lightning is constantly investing in new products and new technologies, including electrified powertrains, mobile chargers, and telematics and analytics software. However, there can be no guarantee of future market acceptance and investment returns with respect to new products or technology.

**Time Frame:** Medium to Long-Term

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### 2. Risk type: Increasing market competition and consolidation

**Primary potential avenues of financial impact:** Revenues and costs, operating expenses

**Description:** The automobile industry, and the electric vehicle segment in particular, is highly competitive, and Lightning competes for sales with electric vehicle manufacturers and traditional automotive companies. Many of Lightning's current and potential competitors have significantly greater financial, technical, manufacturing, marketing, and other resources. We expect competition to increase due to the changing regulatory and financial incentives. As a result, increased market competition and consolidation may occur in the ZEV industry due to a greater interest and viability of renewable technologies and market opportunities in climate-neutral products. Increased competition may result in higher R&D, sales and marketing expenses, and lower revenue for Lightning.

**Time Frame:** Short to Long-Term

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### 3. Risk type: Uncertain supply and increased cost of raw materials and components

**Primary potential avenues of financial impact:** Costs

**Description:** As competition in the ZEV market and sales of ZEVs increase, demand for components and raw materials could increase, which could outpace supply and lead to shortages of components and raw materials as well as price increases. Over the long-term, climate-related weather events may also affect supply. Lightning relies on third-party suppliers for the provision and development of many of the key components and materials used in its products, and has experienced delays, shortages and other disruptions in its supply chain. Further, Lightning may not be able to pass increased costs of raw materials and components on to customers. Any disruption in Lightning's supply chain and cost increase could negatively affect Lightning's business.

**Time Frame:** Medium to Long-Term

## Top Physical Risks

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**1. Risk type:** Chronic and acute changes in weather patterns and extremes

**Primary potential avenues of financial impact:** Supply chain costs, increased insurance premiums, damage to facilities

**Description:** Lightning operates primarily out of a leased facility in Colorado. In the past several years, Colorado, like other areas globally, experienced severe wildfires as well as floods, snowstorms, and other weather events. Changing weather patterns and more instances of extreme weather-related events, such as wildfires, could potentially cause damage or disruptions to our supply chain, facilities, and operations. Further, while we carry various levels of insurance, we may not be fully protected against all such risks, nor are all these risks insurable. We could face substantial losses if an event occurs for which we are not fully insured or are not indemnified against. In addition, there can be no assurance that insurance will continue to be available to cover any or all these risks, or, even if available, that insurance premiums or other costs will not rise significantly in the future, to make the cost of such insurance prohibitive.

**Time Frame:** Long-Term

## Top Opportunities

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**1. Opportunity type:** Shift in consumer preference towards ZEVs

**Primary potential avenues of financial impact:** Revenues

**Description:** While the adoption and acceptance of electric vehicles is still in the early stages, consumer demand for ZEV products and services has been steadily increasing over the past years and may continue to increase significantly in the coming years. Lightning believes that the availability of incentives and the growing availability of charging infrastructure, paired with an increased awareness of the environmental impacts of emissions, and increased cost competitiveness and capability of ZEV technology, are all factors contributing to the increased adoption rate of ZEVs. Lightning is focused on developing and manufacturing products that meet the increased demand and expects its revenue to grow substantially.

**Time Frame:** Short to Long-Term

**2. Opportunity type:** Expected market growth of ZEV and ancillary technologies

**Primary potential avenues of financial impact:** Revenues

**Description:** Lightning expects to benefit from dramatic growth of the ZEV and ancillary markets (EVs as a Service, mobile battery infrastructure, charging infrastructure) due to rising consumer preference for EVs, increasing cost parity, investor interest, public incentives, and greater capability. Given our array of products, we expect to benefit from this market growth.

**Time Frame:** Short to Long-Term

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### 3. Opportunity type: Increase in public incentives

**Primary potential avenues of financial impact:** Revenues

**Description:** The adoption of ZEVs is propelled by government and economic incentives. For example, the California HVIP incentive program allocated approximately \$235 million in 2021 and \$250 million in 2022. In addition, the recently passed Inflation Reduction Act contained provisions targeting ZEVs. As governments increasingly incentivize ZEV technology, the competitiveness of ZEV compared to ICE vehicles increases and it presents an opportunity for increased sales of ZEVs, leading to higher revenues.

**Time Frame:** Medium to Long-Term

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### 4. Opportunity type: Increased investor interest and activity

**Primary potential avenues of financial impact:** Lowered cost of capital

**Description:** Increasingly, investors are using sustainability factors to inform their investment decisions. Increased investor activity may generate higher returns for Lightning's shareholders and decrease our cost of raising capital. Lower cost of capital could allow Lightning to scale its business, acquire talent, and invest in R&D initiatives, among others.

**Time Frame:** Medium to Long-Term

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### 5. Opportunity type: Technology, accelerated build-out of charging infrastructure

**Primary potential avenues of financial impact:** Revenues

**Description:** The drive to invest in electric vehicles also accelerates the buildout of charging infrastructure, supported by public incentives and technology maturation. This buildout is expected to further increase the adoption of ZEVs, increasing demand for Lightning's ZEVs and other products.

**Time Frame:** Medium to Long-Term

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### 6. Opportunity type: Political and consumer pressure on businesses to be climate neutral

**Primary potential avenues of financial impact:** Revenue, lowered cost of capital

**Description:** Added political and consumer pressure on businesses to adopt ZEVs may expand our addressable market and increase our revenue opportunities.

**Time Frame:** Medium to Long-Term

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## B. Describe the impact of climate-related risks and opportunities on the company's businesses, strategy, and financial planning.

Lightning is a leading electrification solutions provider committed to enabling the eradication of commercial vehicle emissions, one of the top contributors of greenhouse gas emissions in the transportation sector according to the U.S. Environmental Protection Agency. We design and



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manufacture ZEVs and charging infrastructure solutions for commercial fleets, large enterprises, original equipment manufacturers and governments. Lightning's product offerings range from Class 3-5 cargo and passenger vehicles and school buses to Class 5 and 6 work trucks, and Class 7 city buses and motorcoaches.

We started in 2008 as a manufacturer of hybrid systems for commercial vehicles, and in 2017, customer feedback led us to understand that hybrid systems did not adequately address the growing issue of urban air pollution from commercial vehicle fleets. In 2017 we redirected our efforts to focus exclusively on the attractive market opportunity in ZEVs. We leveraged nearly 10 years of extensive knowledge and production infrastructure from developing and implementing hybrid commercial vehicles to successfully adapt to ZEVs. Our 13-year track-record of research and development, significant customer engagement and validation, and focus on building highly customized vehicles has allowed us to create an electric solution that we believe remains ahead of the competition in terms of technology, reliability, and versatility. We believe our modular software, which can be used in multiple platforms and applications, and hardware solution enables us to serve a variety of attractive niche markets in a cost-effective and scalable manner.

Lightning's financial planning and budgets contain funding for R&D initiatives to improve Lightning's product offerings, such as (i) ZEV development and system integration; (ii) software and algorithms for our electrification solutions; (iii) data analytics; (iv) accelerated lifetime testing processes to improve reliability, maintainability, and system-level robustness; (v) sub-systems enhancement; and (vi) mobile charging solutions. Further, Lightning invests in upgrading its facilities and operations to improve efficiency and decrease its environmental footprint, despite only being a tenant. For example, Lightning has implemented energy efficiency improvements with LED lighting, HVAC system upgrades, and water fixture improvements at its Loveland, Colorado plant.

## **C. Describe the resilience of the company's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.**

Lightning considered two different climate related scenarios: a 2°C or lower scenario, and a current policy (3°C+) scenario. The company's strategy as a manufacturer of zero-emission vehicles and enabling technologies is resilient under both scenarios. Proper mitigation practices are being put into place in accordance with the priorities mentioned in our Risk Management section.

Considering a 2°C or lower scenario, Lightning identified that the before-mentioned transition risks would likely be more prevalent over time. Many of these risks, however, could translate into opportunities for Lightning. Lightning eMotors' strategy looks to capitalize on consumer shifts and market expansion, as companies and consumers move away from emission-producing vehicles.

Under a 3°C+ scenario, we found that physical risks may become more prevalent. Lightning eMotors is seeking to create a resilient supply chain that will not be easily disrupted by climate events. Under a 3°C+ scenario, Lightning still believes that ZEV adoption will increase significantly, and our company will do its part in attempting to mitigate emissions through increased vehicle adoption.

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## Risk Management

### A. Describe the company's processes for identifying and assessing climate-related risks.

Lightning uses scenario planning to consider different potential future outcomes to make more informed decisions. The company's objective is to ensure that all potentially relevant climate-related risks are considered and evaluated.

Climate-related risks and opportunities were identified under two different climate scenarios by the ESG Core Team through a formal risk assessment process. This assessment was informed by the TCFD's 2021 "Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures" guidance, the TCFD initial report, and a review of peer companies. The assessment involved direct input from the members of the ESG Core Team and consultation with staff outside of the team.

After narrowing down the identified risks and opportunities to those most salient to the company, the ESG Core Team reviewed them across time under two different climate scenarios. The ESG team considered their likely impacts on Lightning, marking the most significant issues for management and mitigation.

### B. Describe the company's processes for managing climate-related risks.

The climate related risks identified were ranked in order of urgency and severity through a rigorous review process. Once the top risks were identified, individual owners were assigned monitoring responsibilities. These owners actively assess a group of metrics for each risk and opportunity.

The risk owners brief the ESG Core Team regularly. The management and monitoring of climate risks and opportunities is an essential aspect of our company's overall strategy, operations and processes as a ZEV manufacturer.

### C. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the company's overall risk management.

Lightning's climate risk management process was initiated prior to the company's formal enterprise risk management process. As our enterprise risk management process has matured, the company has worked to ensure that its climate risk management process is assimilated into the overall system.

## Metrics and Targets

### A. Disclose the metrics used by the company to assess climate-related risks and opportunities in line with its strategy and risk management process.

In line with the Sustainable Accounting Standards Board's (SASB) Industrial Machinery & Goods Standard, in 2021 Lightning published its first comprehensive list of industry-specific and material sustainability metrics. We strive to improve our performance on these metrics going forward.

Lightning has also established specific metrics for the assessment of the climate-specific risks and opportunities that have been identified. The metrics can be categorized into three types:

- **Revenue based:** Several climate-related risks and opportunities have the potential to meaningfully increase or decrease our revenues. We expect to assess the impact of these risks and opportunities on our business by using various revenue-based metrics such as performance vs. plan, year over year growth, and backlog growth.
- **Cost based:** Some of the identified risks and opportunities affect our costs and expenses, especially as it relates to the cost of components and our spending on engineering and R&D. We will use related spending metrics to assess the impact of these risks and opportunities.
- **Sentiment based:** Many of the risks and opportunities relate directly to societal and government sentiment toward the adoption of emissions-reducing technologies to combat pollution and climate change. The sentiment can be measured by metrics associated with incentives, mandates, climate pledges, and customer opinions about electric vehicles.

### B. Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.

Lightning recognizes the impacts of GHG emissions on climate and the risks associated with climate change and emissions. As an early-stage company with a limited operating history, Lightning is working towards estimating its GHG emissions.

### C. Describe the targets used by the company to manage climate-related risks and opportunities and performance against targets.

As an early-stage company with a limited operating history, Lightning is working towards setting specific growth targets to expand its business and its positive impact on emissions.



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