Dear Chairman Gensler:

Jupiter Intelligence (Jupiter) appreciates the opportunity to submit these comments regarding the Securities and Exchange Commission’s (SEC or Commission) Proposed Rule on “The Enhancement and Standardization of Climate-Related Disclosures for Investors” (Proposed Rule).1 At the outset, Jupiter expresses its strong support for SEC’s proposal to require companies subject to the conditions herein to disclose material climate-related financial risks.

Jupiter has developed an advanced technology platform that delivers projections of impacts from extreme weather and climate events on infrastructure at a very granular level (in other words, at exceptionally high spatial resolutions) ranging from individual assets to total portfolios, and over time horizons ranging from a few hours to several decades hence. Jupiter’s products combine weather, climate, and engineering models, cutting-edge machine learning methods, satellite data, and cloud computing.

An array of federal, state, and local government agencies as well as private sector entities across critical infrastructure sectors, including the nation’s largest lending institutions, insurance companies, and electric utilities, already use Jupiter’s data analytics to help assess and manage the physical risks of extreme weather and climate events. Physical risks often are referred to as perils. They include but are not limited to floods, wildﬁres, droughts, heat, and hurricanes.2 When decision makers have access to such weather and climate risk prediction capabilities, they are better able to make informed decisions that drive superior risk management, risk disclosure, and resilient infrastructure planning. Jupiter is not the only company or entity

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2 Three of the 15 largest U.S. power providers use Jupiter’s services for resilience planning; utilities, real estate, pharmaceutical, and many other companies across critical infrastructure sectors use Jupiter to comply with disclosure and other regulatory requirements. The U.S. Air Force, U.S. Army, the Federal Emergency Management Agency (FEMA), the U.S. Department of Housing and Urban Development (HUD), and public sector customers in Florida and New York use Jupiter’s services to support risk assessments and resilience investments.
with this type of tool, though it is widely regarded as one of the leaders in offering these types of analytics and services.

Jupiter is responding to only a few of the specific questions posed in the Proposed Rule that request input.

I. Strong Support for Mandatory Disclosure of Climate-Related Financial Risks

*Proposed Rule Section II. B., “Disclosure of Climate-Related Risks”*

A. Question #9:

1. *Should we define “climate-related risks” to mean the actual or potential negative impacts of climate-related conditions and events on a registrant’s consolidated financial statements, business operations, or value chains, as proposed?*

*• Jupiter strongly supports – and urges the SEC to retain – requirements for the disclosure of climate-related financial risks.*

*• Jupiter also strongly supports – and urges the SEC to retain – the proposed processes for reporting actual and potential negative impacts of climate-related conditions on a registrant’s consolidated financial statements, business operations, or value chains.*

According to the Commodity Futures Trading Commission’s (CFTC) 2020 report, “Managing Climate Risk in the U.S. Financial System,” and other similar reports that have since been issued in the U.S. and globally, climate change already is threatening “the stability of the U.S. financial system” and nearly every critical infrastructure sector.3 Alarmingly, a May 2021 Executive Order on Climate-Related Financial Risk recognized that “the failure of financial institutions to appropriately and adequately account for and measure these physical and transition risks threatens the competitiveness of U.S. companies and markets, the life savings and pensions of U.S. workers and families, and the ability of U.S. financial institutions to serve communities.”4 Jupiter’s data analytics on a comprehensive set of physical perils underscore these dangers in pointing to “a significant underestimation of risk by insurers and financial institutions that pose a potential economic calamity.”5 Then-

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Acting SEC Chair Lee’s September 2020 New York Times op-ed sums up the need perfectly: “[d]ealing with and adapting to the coming calamities means we must price climate risk accurately,” which realistically can happen “only through mandatory public disclosure.”

To address these conditions and risks, Jupiter therefore wholeheartedly supports the SEC’s major decision in this Proposed Rule to require companies of certain size and emissions thresholds to disclose material physical climate-related risks in financial filings. Having companies establish a baseline and measure their risks – and changes thereto – and mandatorily disclosing them – will improve corporate risk management and will increase the understanding of these risks by investors, shareholders, and consumers, so that collective solutions can be developed. Jupiter urges the SEC to retain this mandate, as it proceeds to finalize the Rule.

The fact that the Federal Reserve Board, Financial Stability Board (FSB), and the Commodity Futures Trading Commission (CFTC) also have begun detailing how climate change poses major risks to the stability of the U.S. financial system and its institutions, and have concluded that U.S. financial regulators must move swiftly to understand, measure, and address those risks, represents major progress, as well. Material climate-related financial risk disclosure is vital to these efforts.

In addition, states are beginning to act: New York, for example, notified its regulated financial institutions that they are going to have to disclose climate-related financial risks to better manage the financial impacts of climate change. It is important that the United States avoid a patchwork approach to climate risk disclosure requirements. A number of other countries already are taking steps with respect to climate disclosure, as well. I continue to call for corporate action and leadership, and to urge global corporations to move to the forefront of physical climate risk management and disclosure, which this Proposed Rule will expedite.

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7 Financial Stability Board (FSB), The Implications for Climate Change on Financial Stability Report, November 23, 2020 (hereinafter referred to as FSB Report).
8 CFTC Report and FSB Report.
2. Question #9 (continued): Should we define climate-related risks to include both physical and transition risks, as proposed?

- Jupiter supports and encourages the SEC to retain its proposed definition of climate-related risks to include both physical and transition risks (associated with the transition to a low-carbon economy).

Two key points underscore the importance of maintaining both physical and transition risks in the definition of climate-related risks. One is the increasingly-credible scientific evidence that the impacts of extreme weather events are growing in frequency and severity over time. In fact, a recent report\(^\text{10}\) by the internationally-recognized body of technical climate experts, referred to as the Intergovernmental Panel on Climate Change (IPCC), contains the most conclusive findings yet that human-induced climate change has caused “widespread and rapid changes” that are intensifying, with some trends now irreversible, at least for decades to come, if not beyond.\(^\text{11}\) These findings led the UN Secretary General to declare that we are facing a “\textbf{code red for humanity.”}\(^\text{12}\)

A second point is that physical risks are defined to be due to impacts on infrastructure and financial systems from the physical effects of climate change. These risks are among the types of climate risks that can be identified, quantified, and measured and, therefore, disclosed.\(^\text{13}\) Such disclosures will facilitate development of more standardized data that are consistent, comparable, and reliable in identifying risks. Physical risk reporting must continually be based on sound scientific evidence and understanding. Otherwise, the financial impacts of physical risks and their linkages to transition risks will be incomplete and misrepresented.

3. Question #9 (continued): Should we define physical risks to include both acute and chronic risks and define each of those risks, as proposed?

- Jupiter supports and urges the SEC to consider keeping the proposed requirement that physical risks encompass those that are both acute and chronic. The need for doing so is that significant impacts likely result from the compound nature of acute and chronic risks and feedbacks among chronic and

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acute risks. This is consistent with the Task Force on Climate-related Financial Disclosures (TCFD), which recognizes the importance of examining both the acute and chronic aspects of physical risks. (See also response to Question #11 below.)

4. **Question #9 (continued): Are there any aspects of the definitions of climate-related risks, physical risks, acute risks, chronic risks, and transition risks that we should revise? How should we address risks that may involve both physical and transition risks?**

   - **Suggested changes to the proposed definition:**
     - Jupiter encourages the SEC to consider removing tornadoes from the list of potential defined acute physical risks, because there is limited scientific understanding of climate change impacts from tornadoes.
     - A key tenant of the TCFD framework is to use “decision-useful” climate hazard information that translates to financial impacts on the registrant. Thus, Jupiter encourages the SEC to consider requiring registrants to examine and disclose the range of risks they face (and that pose risks to their capital assets), and to not limit disclosures to financial loss and/or generic scores. While scores and subsequent financial calculations can be straightforward, they also are highly subjective and can obfuscate the hazards and drivers of financial losses. Thus, if scores are used, Jupiter encourages the SEC to require registrants to disclose their methodology, and the underlying hazard metrics.

B. **Question #11 (and pertains to Question #9):** Some chronic risks might give rise to acute risks, e.g., drought (a chronic risk) that increases acute risks, such as wildfires, or increased temperatures (a chronic risk) that increases acute risks, such as severe storms. Should we require a registrant to discuss how the acute and chronic risks they face may affect one another?

   - Jupiter encourages the SEC to consider requiring registrants to disclose acute and chronic risks both with respect to physical and transition risks. And, Jupiter encourages the SEC to consider requiring registrants to discuss how the acute and chronic risks they face may affect one another.
     - It is important for registrants to understand acute and chronic risks and the ways in which these risks can affect one another and can create a compound risk.

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14 Feedbacks here refer to chronic risks (e.g., increasing temperatures) that interact with, or cause, individual events, and their impacts, to be more extreme.
As noted above, the need for doing so is that significant impacts likely result from the compound nature of acute and chronic risks, and feedbacks among chronic and acute risks.\(^{16}\)

More specifically, Jupiter strongly recommends that issues and risks be viewed in the context that the most unlikely events can have the biggest economic impacts. Such major impacts occurred as a result of the global financial crisis of 2008 and of the COVID-19 pandemic that began in March 2020, neither of which were appropriately factored into risk management practices globally and each of which necessitated substantial amounts of public funding to stabilize a battered economy.

Rarely are significant risks manifest due to single hazards, and not all hazards will be material to every registrant or all of a registrant’s physical assets. Rather, the worst impacts of any event often are attributable to a combination of several unlikely, uncorrelated drivers, such that multiple or compound hazards or perils often contribute to an overall increase in total risk.

In addition, it is worth considering that it is not only the compound nature of acute and chronic risks, but also the ramifications thereof. One can think of these as the “amplifying effects” of compound risks, which can consist, for example, of supply chain interruptions, or workforce interruptions or perhaps even relocation. These compound effects and their ramifications merit consideration by the SEC for inclusion in the disclosure requirements.

C. Question #13 (and pertains to Question #9):

1. If a registrant determines that the flooding of its buildings, plants, or properties is a material risk, should we require it to disclose the percentage of those assets that are in flood hazard areas in addition to their location, as proposed? Would such disclosure help investors evaluate the registrant’s exposure to physical risks related to floods?

   • Jupiter encourages the SEC to require registrants to disclose exposure in “flood hazard areas.” Yet, Jupiter further encourages the SEC to define “flood hazard area,” because a standardized definition of a “flood hazard” can be a meaningful metric for comparability among such factors as property or asset locations, water depths, or “forcing factors” (e.g., mitigation measures, catchment characteristics).

\(^{16}\) Feedbacks here refer to chronic risks (e.g., increasing temperatures) that interact with, or cause, individual events, and their impacts, to be more extreme.
2. **Question #13** (continued): Should we define “flood hazard area” or provide examples of such areas? If we should define the term, should we define it similar to a related definition by the Federal Emergency Management Agency (“FEMA”) as an area having flood, mudflow or flood-related erosion hazards, as depicted on a flood hazard boundary map or a flood insurance rate map? Should we require a registrant to disclose how it has defined “flood hazard area” or whether it has used particular maps or software tools when determining whether its buildings, plants, or properties are located in flood hazard areas? Should we recommend that certain maps be used to promote comparability? Should we require disclosure of whether a registrant’s assets are located in zones that are subject to other physical risks, such as in locations subject to wildfire risk?

- Jupiter encourages the SEC to consider using a commonly-used, easily-understood definitions and metric(s), similar to those used by the Federal Emergency Management Administration (FEMA). FEMA’s definition and metrics merit serious consideration: it defines a flood hazard in terms of expected frequency of occurrence, e.g., a “1-in-10 year,” or “1-in-100-year” flood event. However, it is important for the SEC to be aware, or reminded, of some of the major limitations of FEMA’s “1-in-XX-year” flood event definitions, or metrics, respectfully, and the consequent need to revise and update them. First, FEMA’s definitions largely are based on historical, rather than future, data. Second, FEMA’s flood hazard definition is limited to only riverine and coastal sources of flooding, meaning it does not include other sources of flooding, referred to as “off-floodplain” or surface, or pluvial, sources, that can contribute significantly to flood risks in the United States. Therefore, Jupiter encourages the SEC to consider using a flood hazard definition that represents a more realistic and holistic view of flood hazards by including all sources of flooding and future projections of such sources.

D. **Question #15:** Are there other specific metrics that would provide investors with a better understanding of the physical and transition risks facing registrants? How would investors benefit from the disclosure of any additional metrics that would not necessarily be disclosed or disclosed in a consistent manner by the proposed climate risk disclosures? What, if any, additional burdens would registrants face if they were required to disclose additional climate risk metrics?

- To help registrants measure and disclose climate-related risks, or impacts, in a consistent, uniform, comparable, and decision-useful manner, and to help protect investors, Jupiter urges the SEC to consider requiring registrants to disclose the hazards, or hazard metrics, underlying climate-related risks. These factors can affect registrants’ decision-making processes. An example of an underlying hazard or hazard metric consists of: flood depths – knowing that flooding
(i.e., climate-related risk) will occur is important, but equally or more important is knowing the depth or extent to which flooding will occur; the latter is the underlying risk. Other examples of underlying risks include wind speeds and days of excessively high heat or humidity. In the spirit of decision-useful metrics that map to financial risk in a consistent, comparable manner, Jupiter has developed a set of metrics it recommends for registrants’ consideration.17

In the same spirit, the SEC is encouraged also to consider the following in defining how physical and transition risks are evaluated and reported.

- **Jupiter supports the SEC’s consideration of requiring additional metrics that help quantify risk**, such as: acute wind; rainfall; extreme heat, including humidity; and storm surge/flooding, including from tropical cyclones, as these types of events can cause severe and widespread damage to a registrant’s physical assets and labor workforce and can help registrants prepare for human and infrastructure adaptation and enhanced resilience. It also is important for the SEC to consider concentrations, or aggregations, of risk (e.g., zip codes with highest risk, number of assets in a flood zone). Additionally, specific risk types and levels may be focused over acute and chronic scales. Such metrics will more clearly map to financial consequences than, for example, average temperature changes.

**II. Strong Support for Requiring Disclosure of Current and Future Climate-Related Risks**

Jupiter underscores and expresses extremely strong support for the SEC’s recognition of the dynamic nature of climate-related risks and its proposal to require disclosure of current and future climate-related risks (using current and future-looking data). Jupiter strongly urges the SEC to retain this requirement as it moves to finalize this Proposed Rule. Undertaking this step alone would represent enormous progress.

Given the unprecedented nature of climate-induced extreme weather events that the United States – and the world – are experiencing, and the impacts thereof, historical and current-year data are not suitable proxies for future risks to ensure critical infrastructure sectors, including the financial sector, remain resilient going forward.

To this end, Jupiter, including in its prior comments to the SEC, has consistently recommended and emphasized the importance of the Federal government requiring consideration of future conditions for any financial or physical asset it owns, subsidizes, regulates, or otherwise supports. In particular, there is a duration mismatch problem between the economic life of assets and portfolios, and the risk management practices of both the Federal government and the private sector.

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The Proposed Rule notes that determining the likely future impacts on a registrant’s business might be difficult for some registrants. However, Jupiter could not agree more with the point made by multiple commenters that the “science of climate modelling has progressed in recent years,” and Jupiter is but one example of the type of world-class modeling and analytics services that are “available to assist registrants in making this determination.”

III. Support for the SEC’s Proposal to Disclose Material Climate Risk at Zip-Code Level Resolution

Proposed Rule Section II. B. 1, “Definitions of Climate-Related Risks . . .”

Question #12: For the location of its business operations, properties or processes subject to an identified material physical risk, should we require a registrant to provide the ZIP code of the location or, if located in a jurisdiction that does not use ZIP codes, a similar subnational postal zone or geographic location, as proposed? Is there another location identifier that we should use for all registrants, such as the county, province, municipality or other subnational jurisdiction? Would requiring granular location information, such as ZIP codes, present concerns about competitive harm or the physical security of assets? If so, how can we mitigate those concerns? Are there exceptions or exemptions to a granular location disclosure requirement that we should consider?

Jupiter supports the SEC’s proposal to require disclosure of material climate risks at zip code-level (or equivalent in non-US jurisdictions) resolution. This level of granularity is sufficient for investors to understand concentrations of risk across companies and is a reasonable level, or degree, of resolution for risk assessment and comparison purposes. At the same time, it offers a suitable level of coarseness, so that registrants will not be anticipated to be at risk of disclosing too much proprietary information.

On the other hand, some climate-related hazards can vary significantly over a short geographical distance (e.g., a flood hazard), thus country- or regional-level, low-resolution analyses (e.g., typically “top-down” analyses, i.e., often 25 kilometers or more, that could encompass multiple zip codes) will not provide sufficient granularity to appropriately assess the risk of individual assets.


19 For awareness and reference purposes, Jupiter provides metrics at a resolution of 90 meters (and uses a “bottom-up” approach). Its metrics can be aggregated easily for a zip code, including for one or more assets within a zip code.
IV. Proposed Time Horizons

Proposed Rule Section II. B. 2, “Proposed Time Horizons and the Materiality Definition”

Jupiter again commends the SEC for its recognition of the dynamic nature of climate-related risks and the need to manage these risks in relevant time horizons.

A. Question #21: Should we require a registrant to specify the time horizon applied when assessing its climate-related impacts (i.e., in the short, medium, or long term), as proposed? And, Question #8: Should we require a registrant to disclose any climate-related risks that are reasonably likely to have a material impact on the registrant, including on its business or consolidated financial statements, which may manifest over the short, medium, and long term, as proposed? If so, should we specify a particular time period, or minimum or maximum range of years, for “short,” “medium,” and “long term”? . . . What, if any, are the benefits to leaving those terms undefined?

Jupiter supports the SEC’s proposals to require registrants to assess and disclose the materiality of their climate-related risks over short-, medium-, and long-term time horizons. The SEC’s proposal is consistent with the TCFD’s framework that enables registrants to assess short-, medium-, and long-term financial impacts climate-related material risks.20

- Jupiter reiterates a few points made in its prior comments to the SEC, i.e., that a common, agreed-upon set of time horizons, scenarios, acceptable risk levels, and metrics are among the criteria that will enable companies to better assess and manage changes in risk over time. Having a common set of criteria also would facilitate and accelerate more consistent and meaningful disclosure reporting comparisons. Today, analytics are sufficiently mature to support comparisons among companies within a given industry or sector. However, more needs to be done to be able to accurately make comparisons across sectors.21

- That said, Jupiter largely supports the SEC’s decision to leave it to registrants to determine and define the respective short-, medium-, and long-term time horizons they use to assess their climate-related impacts. The SEC proposal importantly allows registrants flexibility to focus on the timing that is most material to their business. It is vital that time horizons match the useful lifetimes of infrastructure and/or other assets. For example, a nuclear plant might have a decades-long expected life span, whereas a financial loan might have a 7-to-10-year duration. Here, too, it is important that time horizons be decision-useful.


And, it might make the most sense for the SEC to leave it to registrants to define their own short- and medium-term time horizons, but for the SEC to consider defining the long-term time horizon(s) to ensure risks are considered far enough into the future. (See “B” below for further details.)

- Fortunately, commercial climate modeling is available (e.g., from Jupiter, and others) that can provide and assess climate risk data on flexible time horizons, for instance, at 5-year intervals from 2020 to 2100. This enables registrants to match time horizons to the expected remaining lifetime of their assets.

- Lower and upper confidence intervals or ranges for all metrics pertaining to physical perils and hazards provide users additional flexibility, guidance for stress testing, and insight into the uncertainty of the effects of physical perils and hazards.

- Jupiter’s data enable immense flexibility in scenarios, time horizons, hazard quantification, and scoring indices to provide users with decision-useful metrics.

B. **Question #8 (continued): Would the proposed provision requiring a registrant to specify what it means by the short, medium, and long term mitigate any such concerns?**

- One concern over the SEC not defining the time horizons, especially the long-term time horizon(s), includes: registrants might not look far enough into the future or might consider time periods that are inconsistent with the changing frequency over which key physical perils or hazards occur.

  For example, Jupiter recommends that acute events be assessed at extreme return periods most consistent with the present and future physical characteristics of the acute perils. While the 100-year and 200-year return periods currently are most common to the insurance industry for assessing wind and flood risks, respectively, the changing nature of wind and flood characteristics may dictate that those return periods are no longer valid. Therefore, the SEC is encouraged to enable registrants to have sufficient flexibility to consider time horizons that match changing physical characteristics in addition to factors related to their infrastructure, assets, supplies, and so forth.

- The SEC should consider clarifying the definition of materiality for long-term risks, and also potentially for medium-term risks (both qualitative and quantitative), to account for the dynamic characteristics of future climate-risk impacts.
V. Disclosure of Business Strategy Resilience Due to Anticipated Future Climate Risks; and, Disclosure of Scenario Analysis, If Used

Proposed Rule Section II. C. 4, “Disclosure of Scenario Analysis, If Used”

Question #30: Should we require a registrant to disclose analytical tools, such as scenario analysis, that it uses to assess the impact of climate-related risks on its business and consolidated financial statements, and to support the resilience of its strategy and business model, as proposed?

- Jupiter supports the SEC’s proposal to require registrants to disclose the resilience of their business strategies, due to anticipated future climate risks. The importance of anticipating future climate risks is reflected throughout this document.

- Jupiter also supports the SEC’s associated proposal to require registrants to disclose the methods and analytical tools used to assess the resilience of these strategies, such as scenario analysis, if used.

There are a variety of approaches to assessing future climate risk, and there is a wide range of scientific robustness available with in-house and third-party tools. Investors will want to be able to review climate risk assumptions to better understand climate-related risks and to be able to draw more accurate comparisons among companies, which will be aided by better science and better disclosure of assumptions.

More specifically, Jupiter supports the SEC’s decision to require the largest companies to disclose scenario analyses, if used, for U.S.-specific disclosures, because, as noted, they already are performing such analyses for multiple jurisdictions across the globe and doing so for U.S.-specific disclosures will ensure consistency with their global approach.

Jupiter wholeheartedly concurs with the rationales and benefits provided in support of having the largest registrants disclose climate scenario analyses, if used. For instance, such analyses can provide a high degree of consistency to predict and compare future climate impacts and conditions between different companies’ disclosures. In addition, scenario analysis could also allow investors to proactively manage risk, as they would be better able to assess the range of potential threats and opportunities, evaluate different management actions, and adapt accordingly. Furthermore, since some climate-related risks may only manifest over longer horizons, “scenario analysis could assist investors in determining whether registrants have incorporated such risks into their long-term strategy. Investors could subsequently incorporate this information into asset prices, thereby more accurately pricing climate-related risks and contributing to market efficiency.”

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Conclusion

Customers and citizens rely on data to better understand, manage, disclose, and reduce risks related to climate change. In the current environment filled with rapid shifts in climate policy, now is the time for the largest companies to implement superior climate risk management strategies, including improved material climate-related risk disclosures, and to train boards and senior management to address material risks.

Jupiter commends the SEC for its leadership and continued efforts to address climate risk as part of a broader set of ESG disclosure metrics and standards. Jupiter supports the SEC Investor Advisory Committee’s recognition of the need to address ESG disclosure and that ESG reporting is a “mainstream, global investment and geopolitical priority.”

The Commission’s efforts will facilitate harmonization among U.S. and global policies and regulations, so that affected U.S.-based multinational companies do not have to meet multiple standards here and in other parts of the world. Jupiter stands ready to be a resource to you at any time.

Sincerely,

Rich Sorkin
CEO
Jupiter Intelligence

Cc: Hon. Allison Herren Lee, Commissioner
    Hon. Hester M. Peirce, Commissioner
    Hon. Elad L. Roisman, Commissioner
    Hon. Caroline A. Crenshaw, Commissioner