



January 28, 2020

The Honorable Bobby Rush
Chairman, Energy Subcommittee
of the House Energy & Commerce Committee
2188 Rayburn House Office Building
Washington, DC 20515

The Honorable Fred Upton
Ranking Member, Energy Subcommittee
of the House Energy & Commerce Committee
2183 Rayburn House Office Building
Washington, DC 20515

The Honorable Paul Tonko
Chairman, Environment and Climate
Change Subcommittee
of the House Energy & Commerce Committee
2369 Rayburn House Office Building
Washington, DC 20515

The Honorable John Shimkus
Ranking Member, Environment and Climate
Change Subcommittee
of the House Energy & Commerce Committee
2217 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Rush, Ranking Member Upton, Chairman Tonko, and Ranking Member Shimkus:

I founded a company, Jupiter Intelligence (Jupiter), that predicts risks from weather and climate change. Recently, Jupiter has updated its prediction services and tools to include fire risk.¹ I am writing to share some information on your important hearing topic of wildfire impacts on the power sector. I do not need to explain the causes of the recent wildfires in California or Australia, which will only be exacerbated by climate change over time.

What might be new and interesting are **Jupiter’s technology, services, and particularly its newer applications for utilities and other entities/key stakeholders to help predict the risks of wildfires, with the obvious aim of helping to mitigate such risks and their impacts.**

Critical infrastructure sectors and government need to do more to enhance emergency preparedness, planning, and resilience, especially in programs related to infrastructure investment. Events such as Hurricane Katrina, Superstorm Sandy, Hurricane Harvey, Midwest flooding, and the California wildfires dramatically illustrate the need for improvement in planning for, predicting, communicating, and reducing the risks of impacts from extreme weather that touch nearly every urban and rural area of the nation.

¹ Jupiter’s customers include some of the world’s largest insurance companies and mortgage firms, power providers, resource companies and ports, large cities, the states of Florida, New York, and Texas, and globally.

Some of the Challenges

Costs for emergency response and disaster recovery are almost always more on the back end, especially in the long run, than proactive efforts to prevent the worst potential impacts of extreme events. Between FY 2013 and FY 2018, FEMA Disaster Relief Fund spending grew 140 percent – from \$11.1 billion to \$26.4 billion. Not only that, costs for emergency response and disaster recovery, especially from FEMA, actually are increasing much faster than GDP or government revenues.²

- In addition, electric utilities generally are not ideal candidates for new, innovative technologies, because they have more traditional business models and longer processes to work through their state utility commissions to get approvals for rate recovery on capital investments. The public sector similarly has different processes and profit motives for infrastructure investments.³
- The State of California is only now rolling out funding for technology investment and is just beginning to talk about this.

Jupiter's Solutions

Jupiter has created the *world's most sophisticated wildfire risk platform, called FireScore™ Operations (FireScore)*. FireScore provides hyper-local probabilistic projections of wildfires on time horizons ranging from a few hours to a few days. This tool, as well as related tools that predict flooding, wind, and extreme heat events on critical time scales, from hours or decades, enable Jupiter to help its customers assess the vulnerability of systems and critical infrastructure. They then can make operational and planning decisions based on their unique set of assets, risk profile, and operational time horizons that improve their resilience.

More specifically, the FireScore tool integrates real-time and forecast weather data, fire spread modeling, and satellite observations into high-resolution, hyper-local wildfire risks, conditions, and likely behavior that is significantly clearer, and more granular, timely, and accurate than all other products. Public and private sector decision makers, such as emergency managers and electric utility executives – already among Jupiter's customers – can have access to (identical) information that can enhance their situational awareness regarding threat levels, which, in turn, can increase lead time, and improve and accelerate their ability to make critical decisions regarding evacuations, or where and when grid de-energization may be warranted, due to the likelihood of outage-producing winds.

² FEMA, *Disaster Relief Monthly Report*, updated May 8, 2019, available at: <https://www.fema.gov/media-library/assets/documents/31789>.

³ Lerman, Rachel, "Why tech has been slow to fight wildfires, extreme weather," Washington Post, January 22, 2020, available at: https://www.washingtonpost.com/national/energy-environment/why-tech-has-been-slow-to-fight-wildfires-extreme-weather/2020/01/22/da0afd72-3d77-11ea-afe2-090eb37b60b1_story.html.

To elaborate further, FireScore enables fire fighters, public safety and emergency management agencies, and others to:

- Assess probable wildfire risk during events, including those driven by wind (e.g., Santa Ana) conditions;
- Pre-position and optimize resources;
- Monitor new ignitions; and,
- Predict fire spread for evacuation planning and fire suppression strategies.

For example, in the case of a utility that has transmission lines and/or other equipment spread over land that is increasingly dry and flammable, Jupiter can help it undertake steps to reduce risk by understanding: the most immediate risks from factors like temperature, wind and precipitation, as well as non-weather variables, such as the wildland-urban interface.

In the course of a recent interview, I stated that “[i]n many cases, companies don’t even understand their current risk, let alone their future risk. We can go to a company and say, ‘You know, for this multi-billion-dollar power plant or this set of distributed transmission equipment, we’ll tell you how great the risk is today. And if you want, we’ll give you an emergency plan response system that you can integrate into your operations as well.’”⁴

Relatedly, Jupiter also has developed a HeatScore™ tool that predicts the number of extreme temperature days per year above a certain threshold over specified time frames at the asset level. It also can project heat stress parameters that may include humidity and wind.

This analysis enables entities, such as utilities, to:

- Based on a more localized examination of peak capacity and demand, better forecast and plan future loads and needs for different networks and rate critical equipment, such as transformers, particularly across extensive service territories where surface temperatures might vary greatly;
- Evaluate the representatives of existing weather data and metrics to help improve situational awareness and emergency response capabilities; and,
- Optimize capital spending to align expenditures with site-specific, anticipated operational degradation of equipment.

⁴ Katz, Neil, “Climate Corner Office: Rich Sorkin, Jupiter Intel CEO, Believes Climate Predictions Will be Big Business,” The Weather Channel, September 11, 2019, available at: <https://features.weather.com/collateral/climate-corner-office-rich-sorkin-ceo-jupiter-intel/>.

Policy Recommendations

- 1) Encourage the development of an extreme weather and climate vulnerability and risk assessment tool to assist relevant agencies and private sector entities in measuring how the risks associated with extreme weather events or climate change affect networks, systems, installations, facilities, and other assets, as well as operational or recovery plans and capabilities.
- 2) Where appropriate, consider adding to relevant planning and related efforts, the use of: “data and tools to assess risk-based vulnerabilities, potential impacts and disruptions to transportation systems, and cost-effective strategies to improve resilience.”
- 3) With respect to evaluation efforts, consider ensuring that this evaluation tool also facilitates the evaluation of risk-based vulnerabilities, as well as the use of data and forecasting tools to optimize investments and minimize adverse impacts to transportation assets.
- 4) Increase opportunities and collaboration through public-private partnerships, so the private sector can continue to expand its innovation by leveraging and enhancing public sector investments.

Additional Background on Jupiter Intelligence

Jupiter uses the National Oceanic and Atmospheric Administration’s (NOAA) and other federal weather prediction and climate models as inputs to its risk assessments. Its success is based on using dynamic modeling combined with Artificial Intelligence (AI), cloud computing, risk analytics, engineering, and complex models run on the latest computer hardware. Not only that, its models also are continuously fine-tuned using petabytes of constantly refreshed data from millions of ground-based and orbital sensors.

Moreover, it offers an easy-to-use customer experience, with simple interactive visuals that look much like Google Maps, that allow users to zoom down to the city block or asset level to get a better sense of the potential risks they face from wildfires or other extreme events. Thus, Jupiter provides services that go far beyond what is available from the government or universities.

WIRED recently wrote: “If you run a business, or maintain a city, or plan power plants or highways or bridges, you’d like to know how bad things are, and how bad they’re going to get. . . . Jupiter explicitly incorporates climate change into its models for catastroph[ic] risk, both proprietary and public, and then offers that knowledge to the kind of people who might lose money when the floods, fires, storms, and heat waves really kick in.”⁵

⁵ Rogers, Adam, “Companies Can Predict Climate Catastrophes for You – as a Service,” *WIRED*, April 29, 2019, available at: <https://www.wired.com/story/companies-can-predict-climate-catastrophes-for-you-as-a-service/>.

Conclusion

A continued commitment from the National Weather Service, NOAA, the U.S. Department of Energy (DOE), and other federal entities to provide open access to model output and observational data is critical to enabling the private sector to do what it does best: provide consumable and actionable information to broad economic sectors. Jupiter understands many of the private sector's needs with respect to risk and climate information and can be helpful in identifying new roles for the public, private, and academic sectors.

Jupiter and other innovative technology companies can offer tremendous additional services to the United States with significant return on investment to the U.S. economy. The innovation that the private sector has demonstrated in technology, efficiencies, and advanced analytical techniques has not yet been fully applied to the weather and climate communities. Enhanced and thoughtful collaborations between the public and private sectors are likely to allow for unprecedented advances that will help secure the infrastructure, economy and people of the United States. Jupiter looks forward to Congressional support of these public-private collaborations to help improve national and resource security for the future.

Please let me know if I can be a further resource at any time. I can be reached at: rich.sorkin@jupiterintel.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'Rich Sorkin', is centered below the text 'Sincerely,'.

Rich Sorkin
CEO
Jupiter Intelligence