WEATHERING AI

AI-Based, Climate-Informed Grid Planning Platform. As a higher frequency of extreme weather events cause greater destruction on our aging grid, electric utilities are attempting to spend an unprecedented amount of capital to upgrade and harden grid infrastructure. They currently use outdated modeling tools to prioritize their investments, that only look at internal historic data. Asset planner and engineering teams spend an enormous amount of time and effort collecting data, using superficial models, and collaborating with other departments in order to come up with project plans. The result has been that, as utilities build and file their grid investment plans, regulators are typically not satisfied with the justification behind the proposals and have been rejecting or disallowing many of the investments within those plans due to a lack of evidence and quantified consumer benefits. Furthermore, the investments that are allowed are not optimized, as the existing priority mechanism lacks forward-looking weather and climate data.

Rhizome's software technology platform leverages the latest machine learning technologies, causal inference techniques, and dynamically downscaled climate models to autonomously assesses the fragility of distribution assets against extreme weather conditions and forecasts feeder- and lateral-level risk profiles for multiple decades. From this point, users can shrink their 9-month long annual capital planning process to a 2 months as they plan system hardening investments such as undergrounding, covering conductors, pole replacements and upgrades, deploying distribution automation devices, and deploying battery storage projects. Distribution planners and engineers can now seamlessly identify grid vulnerabilities from extreme weather threats, build scenarios of resilience investments, and quantify the benefits of those investments for optimization and regulatory justification.

The regulatory community has been looking for answers on how to provide guidance to utilities for making the grid more resilient at reasonable costs to ratepayers. Today, there is no national standardized framework for assessing risk, quantifying benefits of investments that incorporates the "value of resilience", and how to ensure adequate cost recovery of mitigating investments despite various states starting to implement new rules and requirements for resilience investments.

Rhizome's platform was built to take the latest research and science related to climate and energy systems, and synthesize it into an AI-powered software tool that utilities can use to present various scenarios of investments to regulators with comprehensive impact assessments and cost-benefit analyses. Using this tool, utilities will be able to demonstrate the reasonableness of investments, show how future risks from extreme weather will be mitigated, and forecast future system and customer reliability metrics. Regulators, consumer advocates, and utilities will all benefit from a transparent view of current and future system conditions and the various tradeoffs to creating a safer and more reliable system for customers.