



The interrelationship between climate change and insurance

Rich Sorkin
CEO & Co-founder

Presented to



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PROPRIETARY & CONFIDENTIAL

Catastrophic Impacts are Here Today



NEW YORK
WIND



TEXAS
COLD &
CASCADING IMPACTS



CALIFORNIA
FIRE



“

Without planning and investment, a hellscape will be upon us.

RICH SORKIN

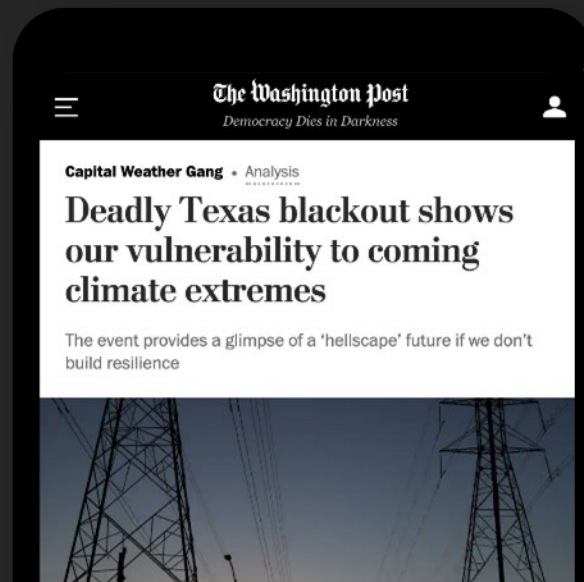
WASHINGTON POST

“

We live in a world designed for an environment that no longer exists.

RICH SORKIN

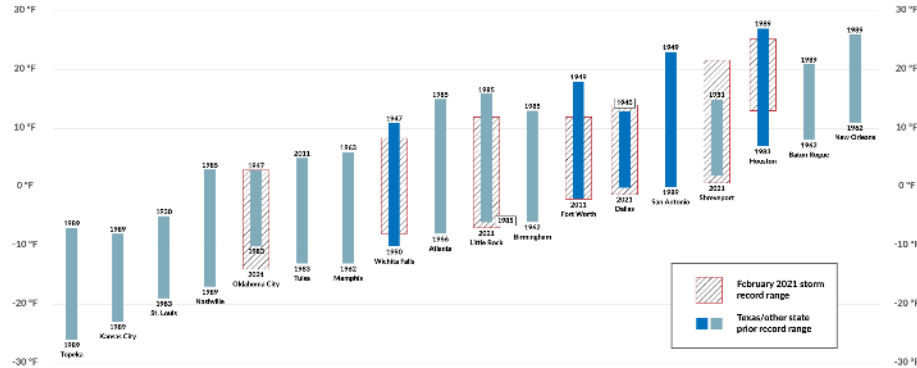
TESTIMONY TO CONGRESS



Failing to prepare...is preparing to fail

Texas 2021 cold in range of state & regional history

Lowest daily highs & lows of prior records vs. February 2021 storm

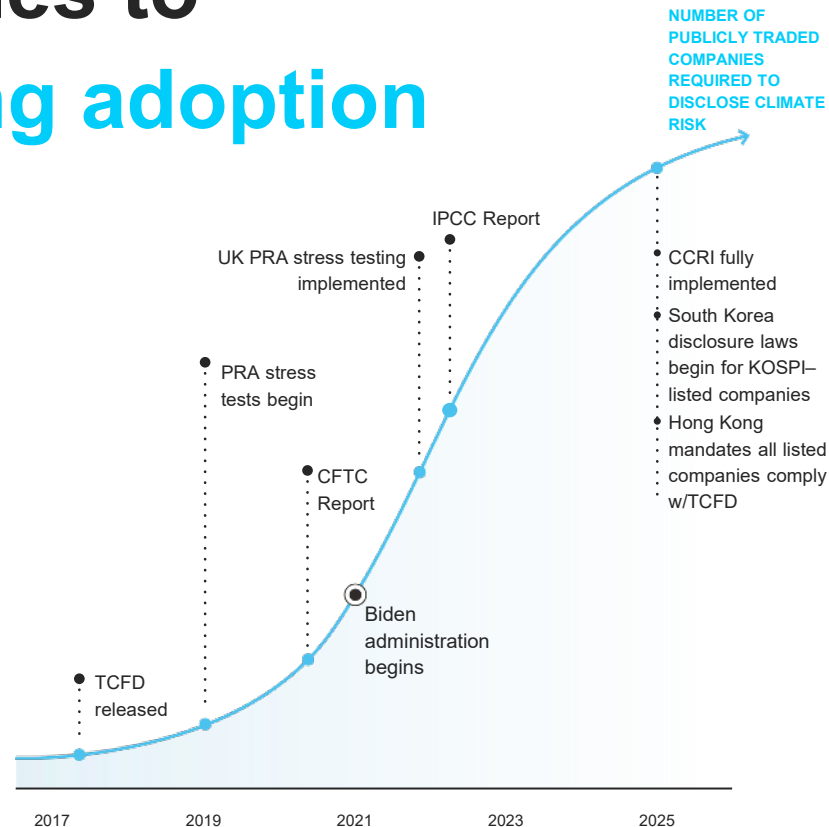


Jupiter metrics
for this use case

- # events with >3 days of temperatures below 0°C
- # multi-day (>3) events with temp below 0°C & 1" of precipitation in a 24-hour period
- # multi-day (>3) events with temperatures below 0°C and > 50 mph wind gusts

Revolutions in attitudes to climate change driving adoption

- CLIMATE CHANGE IS HERE: flood, fire, wind, hail, extreme cold & heat, water scarcity, et al.
- US and Global regulatory and shareholder GOVERNANCE SHIFT
- Global 2000 and USG MUST DISCLOSE FINANCIAL VALUE AT RISK AND BUSINESS INTERRUPTION RISK
- MISPRICED ASSETS (like during Global Financial Crisis) the next opportunity



What we do: Jupiter's Climate Analytics

SCALE



Asset

Regional

Global

PERIL METRICS

40 and growing



Flood | 14



Precipitation | 6



Wind | 6



Heat | 7



Hail | 2



Drought | 2



Fire | 1



Cold | 2

TIME HORIZONS

Next Hour



2100

**Climate Change Data is readily available
for the insurance industry and
in widespread use by
P&C firms, reinsurers, and brokers,
as well as their insureds**

Jupiter helps the world's largest companies

	Corporate and Industrial	Financial Services	Public Sector	Distribution
Publicly Disclosed Reference Accounts	  	  	     	  
Confidential Accounts	<p>2 of U.S. top 10 Power</p> <p>Top 5 Oil and Gas</p> <p>Top 5 Chemical</p> <p>2 of Top 10 Global Mining</p>	<p>Half of U.S. largest lenders</p> <p>Half of largest global insurance companies</p> <p>Top 5 Asset Manager</p> <p>Top 5 Real Estate</p>	<p>Dept of Defense</p> <p>Emergency Management</p> <p>U.S. Congress and Regulatory agencies</p>	<p>Top 5 Consulting firm</p> <p>Top 5 Accounting firm</p> <p>Defense contractors</p>

Climate Risks across the global economy

Asset Management & Banking

- Capital allocation
- Market value analysis
- Portfolio planning
- Regulatory response
- Risk avoidance
- Underwriting & deal structuring

Insurance

- Investment decisions
- Portfolio planning and Reinsurance
- Product development
- Regulatory response
- Risk avoidance
- Underwriting & pricing

Energy & Power

- Electricity and grid management
- Market opportunities
- Regulatory response
- Resilience planning
- Risk identification, management & engineering

Manufacturing & Petrochemicals

- Risk identification, management & engineering
- Strategic capital deployment
- Supply chain risk management
- COVID-19 Vaccine Production and rollout

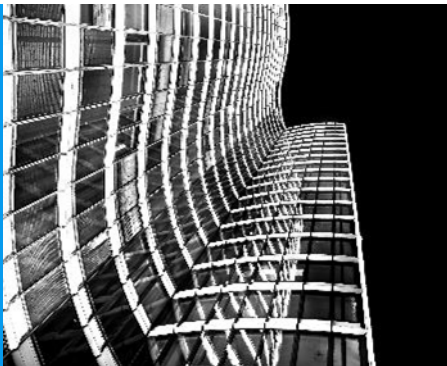
Government & Public Good

- Citizen communication & engagement
- Emergency preparedness
- Risk Identification and resilience project design

**The time is speedily approaching for
Regulators to monitor carriers for their use of
Climate Analytics**

Climate analytics opportunities in insurance

**Underwriting and
Portfolio Planning**



**Real Estate
Investments**



**Regulatory and
Shareholder
Response**



**Risk Engineering
Services**



**An excellent way to get started is to
encourage P&C firms
to help their clients
understand and address duration mismatch
and build resiliency where needed**

The Jupiter Promise

Building resilience for the most vulnerable

- Program to make Jupiter's services available at little to no cost to under resourced countries and communities suffering most from the effects of climate change
- Prepare for the effects of climate-related extremes and chronic conditions such as heat and flooding
- Increasing # of corporate partners including some in this room



Thank you.

CONTACT

Rich Sorkin, CEO & Co-Founder
Jupiter Intelligence
Rich.Sorkin@jupiterintel.com

Backup

Jupiter spans portfolio to individual physical asset analyses

ClimateScore Global

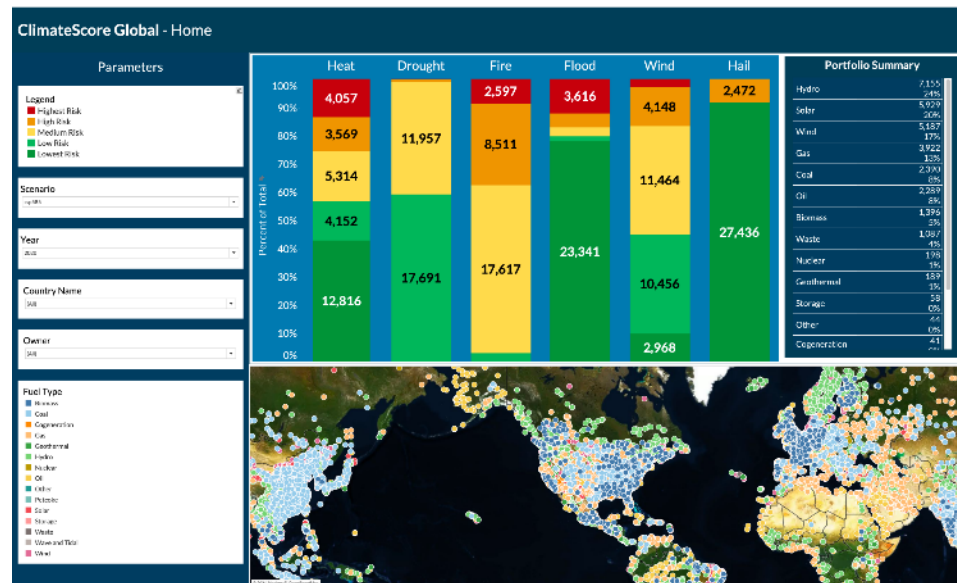
ClimateScore Planning

Use cases	Portfolio management, enterprise risk, pricing and underwriting, shareholder & regulatory response	Risk engineering, capital planning, safety and operations, underwriting, regional portfolio management
Perils	Flood, Heat, Wind, Wildfire, Hail, Drought, Precip	Flood, Heat, Wind, Wildfire
Climate scenarios	SSP1-2.6, 2-4.5, 5-8.5 (+2°C, +2.5°C, +5°C)	
Timescales	Every 5 years, 2020-2100	
Geo coverage	Worldwide	Customer-driven domains
Approach	Statistical downscaling for large-scale coverage	Dynamical-statistical downscaling for regional and local optimization
Spatial resolution	Portfolio (90m)	Asset (<1m - 1km)

Use Case: Portfolio management

Quantifying climate risk for a set of assets

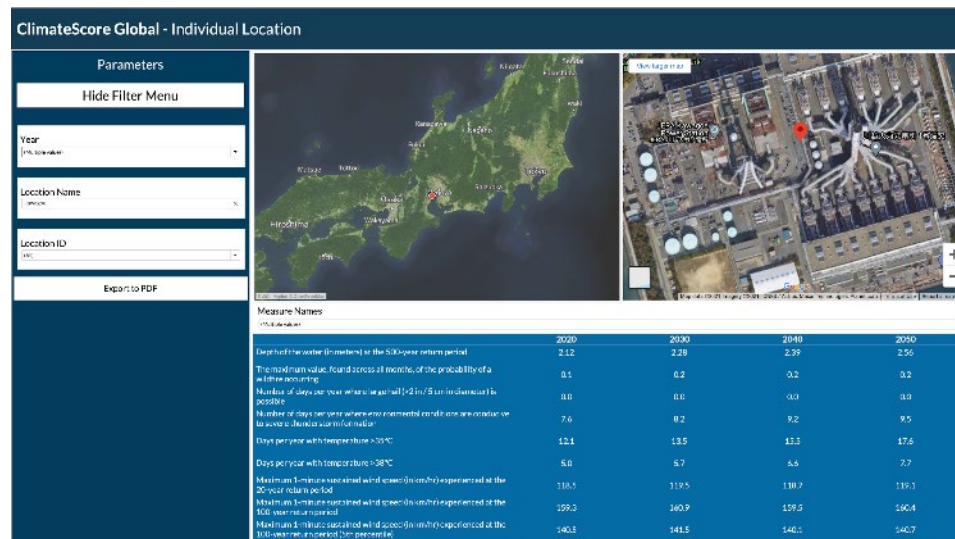
- Use ClimateScore Global to get portfolio exposure accumulation metrics and understand the number of assets at risk currently and in the future (to 2100)
- Determine drivers of risk to focus attention on the areas that will change the most over time
- Quantify the expected modeled loss to use for downstream value at risk calculations
- View uncertainty metrics and compare different climate scenarios to understand variability in climate risk assessments
- Fulfill regulatory obligations and other reporting requirements (e.g. TCFD)
- Utilize insights to build internal view of risk on climate change and how it can be incorporated into business decision-making (underwriting, claims, etc)



Use Case: Risk avoidance / engineering

Providing customers with climate insights

- Use Jupiter data and analytics as a value-added service to customers
- Provide asset-level insights to help customers understand their risk to climate change (up to 6,000 metrics per location in ClimateScore Global)
- Generate risk mitigation recommendations for customer assets, helping to minimize significant changes in insurability
- Design insurance products tailored to the customer's future insurance needs
- Help customers fulfill regulatory and/or internal reporting needs



Use Case: Risk mitigation

Making resiliency decisions at the asset-level

- Use Jupiter's ultra high-resolution data (down to 1 meter) in ClimateScore Planning to understand the variability of climate risk around a key asset
- Incorporate potential resiliency measures into modeling to understand the change in hazard and calculate cost/benefit of different mitigation options
- Get localized climate change scenarios to get the most accurate range of possible outcomes
- Supports long-term infrastructure planning and investment decisions for critical assets such as electrical generation and distribution, ports and airports, dense commercial and residential developments, hotels and refineries

