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Christopher Kirkpatrick

Secretary of the Commission

Commodity Futures Trading Commission

Three Lafayette Centre

1155 21st Street, NW

Washington, DC 20581

Submitted via comments.cftc.gov

Re: Comments on Prediction Markets; Advance Notice of Proposed Rulemaking, 91 Fed. Reg. 12516 (Mar. 16, 2026); RIN 3038–AF65.

Dear Secretary Kirkpatrick:

I write on behalf of Vortex Weather Markets, a small technology company building an autonomous event-contract platform focused exclusively on U.S. severe weather. The platform is in early operation as a paper-trading demonstration at vortexwxpredictions.com. I submit this comment as an operator with hands-on technical experience in weather-event contract design, not as a registered entity and not yet as a designated contract market (DCM) applicant.

The comment is deliberately narrow. The Commission has received more than 800 submissions on this Advance Notice, many of them from established DCMs, industry associations, and law firms addressing the full scope of the Commission's questions. I write to offer views on a slice of the record that those comments may not cover in detail: the specific characteristics of weather event contracts, and how existing Core Principles apply to contracts whose settlement sources are exclusively federal weather and hydrologic datasets.

I support the Commission's stated intent to clarify the regulatory framework for prediction markets within its exclusive jurisdiction. As the ANPRM notes, DCMs certified approximately 1,600 event contracts for listing in 2025, compared to an annual average of roughly five from 2006 through 2020. (ANPRM n.9.) That growth includes a new and structurally distinct category — weather event contracts — that merits separate consideration from the sports and political contracts that have driven most recent litigation and commentary.

Summary of recommendations

The balance of this letter develops four points:

- Weather event contracts differ structurally from other event-contract categories in ways relevant to the Commission's Core Principles analysis. Weather outcomes are determined by physical processes that no market participant can influence, and are recorded by federal agencies operating under statutory public-safety missions.
- Federal-data settlement — using NWS, SPC, NHC, USGS, and NOAA records as the sole settlement authority — is a design pattern that directly addresses the settlement-integrity concerns identified in the Division of Market Oversight's March 12, 2026 Staff Advisory.
- Rules-based (non-discretionary) contract creation and resolution reduces the surface area for selective listing and selective settlement, and is compatible with the DCM self-regulatory obligations embedded in Core Principles 3, 4, and 12.
- If the Commission proceeds to a proposed rule, a lightweight pre-listing verification step focused on settlement-source reliability (documented uptime, stable schema, multi-year publication history) would address settlement-integrity risk without imposing substantive product-design constraints.

1. Weather event contracts are structurally distinct

The ANPRM and the concurrent Staff Advisory appropriately treat event contracts as a broad class. Recent state-level litigation has focused attention on sports and political contracts. Weather event contracts sit at a different position in the Commission's risk landscape, and respectfully, the Commission may find it useful in any future rulemaking to recognize that difference.

1.1 The underlying events cannot be induced or influenced

A tornado, a hurricane landfall, a flash flood, and a severe thunderstorm are outputs of atmospheric and hydrologic processes. No market participant, individually or collectively, can cause a tornado to form or prevent one from forming. This is a structural property of the underlying event, not a feature of any particular contract design. It distinguishes weather event contracts from contracts on sporting events (where participants, referees, or coaches can be approached), from political contracts (where campaigns and donors have direct influence), and from many financial event contracts (where trading volume itself can move the referenced observable).

The Core Principle 3 question — whether a contract is "readily susceptible to manipulation" — applies with materially reduced force when the underlying event is itself non-manipulable. See CEA § 5(d)(3), 7 U.S.C. § 7(d)(3).

1.2 Settlement sources are federal

Each class of weather event contract resolves from a specific federal dataset produced by an agency operating under a statutory public-safety mission, with no financial stake in any trading venue:

- Tornado confirmation and severe-thunderstorm ground truth: NWS Storm Prediction Center Local Storm Reports (LSR) and post-event NWS damage surveys.
- Tornado Warning, Severe Thunderstorm Warning, Flash Flood Warning issuance: NWS Common Alerting Protocol (CAP) feed.
- Tropical cyclone position, intensity, and landfall: National Hurricane Center advisories and post-season HURDAT2.

- Flash flood verification: USGS WaterServices instantaneous-value gauge data and NWS flash flood warning records.
- Coastal water levels and storm surge: NOAA Tides and Currents.

These datasets are produced on a continuous, 24-hour basis. Their formats have been stable for a decade or more in each case. Their publication is not conditioned on any trading venue's requests, commercial relationships, or licensing arrangements. They are available equally to every market participant, every regulator, and every member of the public.

1.3 Distinctness from the sports-contract debate

Several concerns animating recent state-level challenges to prediction markets — characterization as sports wagering, preemption of state gaming authority, conflict with licensed sportsbook products — do not attach to weather event contracts. Weather event contracts function as parametric insurance instruments. They serve hedging applications for agricultural producers, construction operators, outdoor event organizers, and utilities that have no state-licensed gaming analog. To my knowledge, no state has asserted a gaming-regulatory interest in binary contracts on weather outcomes.

I respectfully suggest that any future rulemaking arising from this ANPRM could usefully distinguish weather event contracts — or more broadly, contracts settled exclusively from federal physical-science and hydrologic datasets — from categories where the Commission's manipulation and public-interest concerns are concentrated.

2. Settlement-source integrity

The Division of Market Oversight's March 12, 2026 Staff Advisory emphasizes settlement-source robustness and notes that cash-settled products can create incentives to influence the underlying data used for settlement. I agree this is the right area of focus and offer concrete observations.

2.1 Federal weather and hydrologic data as a settlement standard

For weather event contracts, the ideal settlement source has four properties: (a) produced by a federal agency as part of its statutory mission, (b) published at production cadence through a documented public API or file distribution, (c) with a multi-year track record of format and schedule stability, and (d) available equally to all parties without commercial licensing or access tiers. Each of the sources listed in Section 1.2 above satisfies these properties.

The table below summarizes the settlement sources I have evaluated for each contract category, the specific API or data product, and the approximate date each source's current public interface was established:

Contract category	Federal agency	API / data product	Public since
Tornado warning issuance	NWS	CAP alerts API	2011
Tornado/severe thunderstorm confirmation	NWS, SPC	SPC Local Storm Reports	2000s
Flash flood warning / verification	NWS, USGS	NWS CAP; USGS WaterServices IV	2011 / 2007
Tropical cyclone advisories	NHC	NHC Advisory feed;	Long-standing

Contract category	Federal agency	API / data product	Public since
		HURDAT2	
Storm surge / coastal water	NOAA	Tides and Currents	Long-standing
EF-scale tornado rating	NWS/SPC	Damage-survey reports; SPC LSR	EF scale: 2007

2.2 Pricing transparency

A related concern is pre-settlement pricing integrity — how listed prices are calibrated before the underlying event occurs. On the Vortex platform, contract pricing is derived from the federal operational numerical weather prediction stack: SPC probabilistic convective outlooks anchor baseline probabilities; HRRR (High-Resolution Rapid Refresh) supplies near-term convection-allowing guidance; NAM (North American Mesoscale) and RAP (Rapid Refresh) supply mesoscale and present-state analysis; WPC QPF supplies precipitation distributions for flash flood contracts; SPC Mesoscale Discussions trigger pre-watch contract listings. All of these are federal government products available to every user, every competitor, and every regulator.

I respectfully suggest that DCMs listing weather event contracts be encouraged — and perhaps, in future rulemaking, required — to publicly disclose which federal forecast products feed their probability calibration. This disclosure supports informed participation and surfaces the relationship between listed prices and authoritative federal forecast products, without requiring any proprietary calibration methodology to be disclosed.

3. Manipulation resistance

Core Principle 3 (CEA § 5(d)(3), 7 U.S.C. § 7(d)(3)) requires a DCM to list only contracts that are not readily susceptible to manipulation. Core Principle 4 (CEA § 5(d)(4), 7 U.S.C. § 7(d)(4)) requires DCMs to monitor trading and prevent manipulation, price distortion, and settlement disruption. The ANPRM asks whether prediction markets present distinct manipulation risks and how cross-market manipulation should be considered. I offer three observations specific to weather event contracts.

3.1 Event manipulation

A market participant cannot cause a tornado to form, a hurricane to make landfall, or a river to crest. This is a structural feature of the underlying process and does not depend on any contract-design choice.

3.2 Settlement-data manipulation

The more relevant question is whether a participant can influence the data that determines settlement. For the federal sources listed in Section 1.2, the answer is no in any practical sense. NWS warnings are issued by Weather Forecast Office meteorologists based on radar signatures and verified field reports. SPC Local Storm Reports are cross-checked against radar imagery and post-event damage surveys. USGS gauge data is telemetered from physical instruments in known locations; tampering with a gauge is a federal offense, and remote manipulation of a telemetry stream is detectable as a discontinuity with neighboring gauges. NHC advisories and NOAA tidal data are produced outside any market participant’s

control. The cost of an attempted attack on these data sources is high relative to any plausible economic reward from a binary contract settlement, and the probability of detection and attribution is also high.

3.3 Cross-market manipulation

Weather has indirect links to other markets — natural gas, grain, electricity — but the direction of causation runs from physical weather to financial outcome, not the reverse. A participant attempting to move a weather event contract by moving another market would find the weather outcome unaffected. A participant attempting to move another market by moving a weather event contract would need to first manipulate the physical weather, which is not possible. The cross-market manipulation vector the Commission is right to consider in other event-contract contexts is materially weaker here.

4. Rules-based contract creation and resolution

The Vortex platform creates contracts through a deterministic rules engine. When an NWS CAP alert arrives that matches a listed template for a given forecast zone and event type, a contract is instantiated with a model-derived opening price. Resolution is similarly rules-based: when the specified federal data condition is satisfied, the contract resolves. There is no human discretion in either the listing phase or the settlement phase.

Rules-based operation appears to me to be a design pattern that supports DCM self-regulatory obligations under Core Principles 3, 4, and 12:

- Selective listing is not possible: every qualifying alert produces a contract, regardless of which participants are active on the platform.
- Selective settlement is not possible: every resolved contract settles on the same federal dataset against the same criteria.
- Disparate treatment of similarly situated participants is foreclosed at the listing and resolution layers. All participants see the same contracts on the same terms.

I respectfully suggest that any future guidance on Core Principle compliance note rules-based, non-discretionary contract creation and resolution as a design pattern the Commission views favorably, where technically feasible for a given contract category.

5. Public interest

CEA § 5c(c)(5)(C), 7 U.S.C. § 7a-2(c)(5)(C), authorizes the Commission to determine that certain event contracts are contrary to the public interest. The ANPRM requests views on which contracts may warrant such a determination. I offer two observations on the weather context.

5.1 Hedging utility at retail scale

Weather is one of the largest categories of unhedged financial risk in the U.S. economy. NOAA's National Centers for Environmental Information records 27 U.S. billion-dollar weather and climate disasters in 2024, totaling $182.7 billion in direct damages. Cumulative damages from billion-dollar events since 1980 exceed $2.195 trillion in inflation-adjusted dollars. These figures capture only events exceeding the $1 billion threshold; the much larger aggregate of sub-billion-dollar severe weather is not reflected.

CME Group offers institutional weather derivatives (heating and cooling degree-day futures, hurricane landfall indices), but contract sizes place these products out of reach for small and mid-sized exposures.

Retail-scale weather event contracts, traded on CFTC-registered platforms and settled from federal data, fill a structural gap between institutional weather derivatives and no hedging instrument at all.

5.2 Public-safety information diffusion

Weather event contracts create a small but meaningful financial incentive for participants to read authoritative federal weather data — NWS warnings, SPC outlooks, radar imagery, NHC advisories. Every contract resolution surfaces a specific federal record. This is a secondary and modest benefit, but it is a benefit: prediction-market platforms function, in part, as a distribution channel for public-safety data that the issuing agencies reach a limited audience with directly.

I note this not to argue that weather event contracts are a substitute for the Emergency Alert System or for local public-safety communications — they are not. I note it as a factor the Commission may wish to weigh in cost-benefit considerations under CEA § 15(a).

6. Specific suggestions for any future rulemaking

If the Commission proceeds from this ANPRM to a proposed rule, the following five suggestions are offered for consideration:

- Treat weather event contracts — defined as binary or scalar contracts on meteorological or hydrologic events, settled exclusively from federal datasets — as a distinct subcategory, with provisions targeting sports or political contracts explicitly not applied.
- Publish a non-exhaustive list of federal settlement sources (e.g., NWS CAP alerts, SPC LSR, NHC advisories, USGS WaterServices, NOAA Tides and Currents) on which a DCM may rely without bespoke justification in its self-certification filings.
- Require DCMs listing weather event contracts to publicly disclose the federal forecast products that feed probability calibration. A short methodology statement should suffice; no disclosure of proprietary calibration detail should be required.
- Recognize rules-based, non-discretionary contract creation and resolution as a design pattern that supports Core Principle compliance, where technically feasible for a given product category.
- Adopt a lightweight pre-listing verification of settlement-source reliability — e.g., a documented multi-year publication history, documented schema stability over the prior 24 to 36 months, and documented availability — as a Core Principle 4 check on settlement integrity. This supports the Staff Advisory's focus on settlement robustness without imposing substantive product-design constraints.

Conclusion

Vortex Weather Markets is a small, early-stage operator. I submit this comment not as an established infrastructure provider but as a technologist who has built and continues to operate an autonomous weather-event-contract engine, and who wants the federal regulatory framework for prediction markets to be thoughtful and durable. The Commission's current approach — an ANPRM before a proposed rule, seeking broad public input — is the right one for an emerging product category where the design choices made now will shape the industry for years.

For weather event contracts in particular, the Core Principles framework works well when paired with federal-data settlement, rules-based listing and resolution, and transparent pricing methodology. The

Commission’s continued oversight of these contracts is compatible with, and supportive of, their growth as accessible hedging instruments.

I would be pleased to provide further technical information at the Commission’s request — architecture documentation, federal-data-source inventory, calibration methodology, and manipulation-resistance analysis. Thank you for the opportunity to comment.

Respectfully submitted,

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