NX Horizon Hail Pro™

Hail happens. Be prepared.

NX Horizon Hail Pro™ is the solar industry's new gold standard for hail risk mitigation. Building on Nextracker's extensive experience in hail-prone regions, this comprehensive solution leverages NX Horizon's inherent hail stowing strengths and adds hardware upgrades, expanded software tools, and support services specifically tailored for hail. With NX Horizon Hail Pro, solar developers can pursue projects in hail regions with the confidence that they are prepared with the best mitigation tools available, providing lenders and insurers the answers and assurance they are increasingly demanding.

Addressing a growing threat

Severe convective storms have the potential for damaging hailstones in regions such as the "hail alley" of Texas and the midwestern United States, southern Alberta and British Columbia in Canada, and the east coast of Australia. These storms can produce hailstones up to 3" (75mm) in diameter, much larger than the 1" (25mm) IEC hail standard that PV modules are tested against. These larger hailstones deliver increased mass at higher terminal velocities, resulting in impacts with exponentially greater kinetic energy – enough to shatter PV glass.

Amidst rising awareness of these dangers after a series of significant hail loss events for solar projects, developers, owners, lenders, and insurers are approaching projects in hail-prone regions with caution, and may deem some locations too risky for solar development. Without better solutions, incredible solar resources in these regions could go untapped – a major missed growth opportunity for the industry.

To answer this call, Nextracker developed Hail Pro in collaboration with developers, owners, independent engineers, and insurance experts to provide the most robust hail risk mitigation possible. Architected as a comprehensive solution, Hail Pro enhances NX Horizon with multiple layers of hail risk mitigation that can be configured to the needs of each project with support from Nextracker's team of experts.

Highlights

Automated Stowing

Weather forecast integration and user-selected criteria project economics

Up to 75° Stow Angle

With Hail Pro-75, for extreme hail sites

360° Wind Structural Design

Hail-stow in any direction, regardless of wind

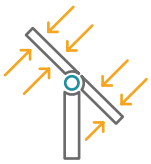
Hail Readiness Support

Ensure systems are primed and ready for hail

Hail-ready hardware

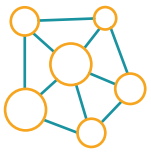
Hail Pro's hardware capabilities start with the core features of the NX Horizon platform. An integrated uninterrupted power supply (UPS) on each tracker row ensures automatic stowing in the event of a grid outage, which may be caused by the severe winds, lightning, and flooding that accompany hail-forming thunderstorms. NX Horizon's 60° stow angle reduces hail impact energy by 40% compared to trackers with 50° stowing. The platform's rapid stowing capability also helps operators stay ahead of the curve, with its patented mechanically-balanced design enabling stowing rotation up to 40° per minute – up to four times faster than conventional trackers.

Hail Pro augments these capabilities with several new hail-ready hardware features:



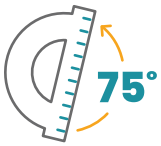
360° Wind Structural Design

- Upgraded wind engineering allows system operators to focus on the best possible hail stowing strategy without needing to consider wind loading. In some cases, stowing "away from the storm" can reduce hail risk to panels by presenting the smallest possible target to wind-blown hailstones and reducing the impact of any strikes which occur. Additionally, some storm data shows that the wind direction can shift or even fully reverse during hail-forming thunderstorms. To support all hail stowing scenarios with confidence and address the realities of unstable convective storms, Hail Pro systems are engineered and warranted to withstand the co-occurrence of hail and wind from any direction.



Rapid Stowing Broadcast

- Because every minute counts when it comes to hailstorms, Hail Pro systems include additional Network Control Units (NCUs), to broadcast more stow commands in parallel across the ZigBee wireless mesh communications network. This communications enhancement ensures tracker rows receive near-instant hail stowing commands.



Hail Pro-75

- Solar projects in regions with especially severe hail may benefit from even steeper hail stowing angles. NX Horizon Hail Pro-75 includes enhanced tracker components for stowing angles up to 75°, an industry first. Lab testing shows 75° stowing may achieve >90% panel glass survivability against 3" ice balls, while also increasing tolerance for potential front-winded hail scenarios which could occur during shifting wind conditions.

Advanced hail stowing software

Hail Pro includes expanded software tools for managing hail stow settings, operator alerts, and issuing rapid stow commands. All functions may be accessed through a single, simple user interface.

Automated Hail Stowing

- NX Horizon Hail Pro can automatically stow in advance of predicted hail events, based on connectivity with third-party weather forecasting services and user-defined triggering criteria such as hail location, size, and probability. Operators also have flexibility to make stowing direction conditional on storm proximity. Forecast data is continuously monitored, and the entire power plant will stow as soon as triggering conditions are met.

Single-Click Manual Stowing

- For operational flexibility and peace of mind, sitewide hail stowing commands may be dispatched at any time with a single click. As with automated stowing, operators may select whichever stow direction maximizes hail protection, taking advantage of the 360° wind structural design which comes standard with Hail Pro.

Email and SMS Alerting

- System operators with Hail Pro can choose when and how to receive hail stowing alerts and confirmations via SMS or email. This includes manual override capabilities, ensuring operators have the visibility and control they require to successfully manage potential hail events.

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Hail readiness support

Successful hail mitigation isn't just about technology – there's also a human component, with people and processes working together as a system. Hail Pro thus includes options for a variety of hail readiness support services, provided by Nextracker's team of hail-tested experts and tailored to individual project needs.

To ensure Hail Pro systems are ready and effective when needed most, Nextracker offers seasonal hail-stow functional testing support, training, and troubleshooting. Our team can also provide ongoing system monitoring, including actionable checklists and reports so owners and operators can rest assured their solar projects are always prepared for hail and demonstrate this readiness to insurers and independent engineers.

FEATURES	NX HORIZON	NX HORIZON HAIL PRO	CONVENTIONAL TRACKERS
Self-powered with integrated UPS	✓	✓	✗
Up to 40°/minute rotation speed	✓	✓	✗
60° stow angle	✓	✓	✗
360° wind structural design		✓	✗
Rapid stowing broadcast		✓	✗
Single-click manual stowing		✓	✗
User-configured automated stowing		✓	✗
75° stow angle		Available	✗
Hail readiness services		Available	✗

> Getting insurance in hail prone geographies like Texas is an increasingly challenging issue solar project developers and owners face today. Advanced technology like Nextracker's new Hail Pro suite is directionally where our industry needs to be going.
>
> **- Michael Alvarez,**
> **COO and co-founder of Longroad Energy**

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