

**VAISALA**

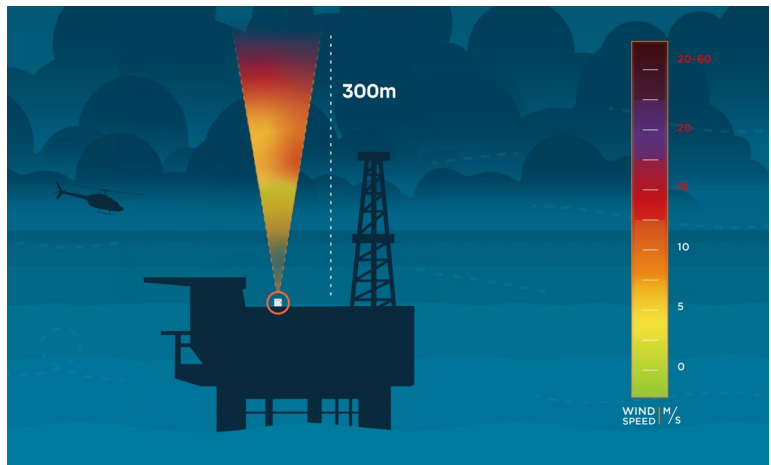
# Wind and weather insights for offshore oil & gas operations

Solutions Brochure



# Unlock superior flight safety for offshore oil & gas operations

The O&G industry faces specific wind and weather challenges for offshore helicopter operations. Here's how accurate, real-time wind and weather insights help you maximize the weather window for safe and efficient flights.



Weather conditions have a critical impact on all offshore operations, especially at the helideck. Most companies rely on helicopters to transport personnel, sometimes hundreds of kilometers out to sea where the weather is more severe and less predictable. The weather can change quickly from takeoff to landing, which makes accurate and timely weather insights critical for safety.

## Wind monitoring at the helideck

High winds, sudden windshear, and turbulence can create hazardous environments for crew transfers. Accurate wind nowcasting (detection of upcoming wind conditions) and real-time wind monitoring above the helideck are crucial to mitigating these risks.

Vertical profiling wind lidar is designed to measure the full wind field above the surface. WindCube® lidars are known the world over as the gold standard in accurate wind measurements. Trusted for decades, the third-party certified wind lidar helps improve local and short-term weather forecasting with continuous observations.

WindCube Offshore is the tool of choice for providing accurate, actionable wind insights in even the harshest maritime conditions. Rigorously validated and extraordinarily flexible, it ensures that wind conditions are measured, understood, and can be acted on in real time. This technology offers critical improvements to safety, efficiency, weather transparency, and operational continuity during crucial helicopter operations, including landings, takeoffs and crew transfers.



WindCube Offshore is a compact, lightweight and rugged remote sensing device. A highly refined, mature offshore technology, it provides unrivalled wind measurement capabilities and services for accurate, real-time 3D wind data.

- Provides accurate, local wind vertical profiling up to 300 m with 20 simultaneous heights measured per second
- Includes WindCube Insights – Fleet visualization software, an easy-to-use, secure, cloud-based tool that provides real-time insights and simple management

## Weather risks for offshore oil and gas helicopter operations

- **High winds and turbulence:** Helicopters are sensitive to such conditions, which can complicate landing and takeoff operations.
- **Windshear:** This sudden change in wind speed and/or direction is hazardous during takeoffs and landings, as it can cause rapid changes in lift and airspeed.
- **Sea fog:** This poses a significant hazard for pilots navigating to and from offshore platforms, and they rely heavily on instruments and advanced navigation systems.
- **Thunderstorms and lightning:** Wind gusts and turbulence can develop fast and be highly unpredictable. Lightning poses a risk to aircraft and the infrastructure on platforms.
- **Temperature extremes:** Operations in regions like the Arctic or near the equator can expose helicopters to extreme temperatures, and cold weather requires special procedures to deal with issues like icing.
- **Wave height:** Significant wave heights can impact the stability of ships or floating platforms, affecting the safety of helicopter operations.

# Improve operations, avoid costly delays, and increase safety



To navigate the full spectrum of weather challenges effectively, offshore oil and gas operators must leverage advanced weather awareness technology.

Vaisala's Offshore Weather Awareness solutions include WindCube Offshore as well as our Vaisala Helideck Monitoring System (HMS) which is integrated with real-time lightning detection and forecasting services.

Together, these instruments and intelligence provide robust safety enhancements through integrated weather sensors, real-time situational awareness, and automated safety procedures – helping you mitigate risks and maintain continuous operations in challenging offshore environments.

Experience powerful, modern software for accurate and timely insights, historical data and trends, and seamless system integrations. You're covered if questions arise with 24/7 global support now – and in the future.

[Learn more about our Offshore Weather Awareness solutions.](#)

## Why Vaisala?

Weather and environmental insights are the greatest catalysts for successful maritime operations— from sensors to systems and digital services, Vaisala provides actionable insights that empower stakeholders to confidently meet challenges and harness new opportunities.

Our globally trusted maritime weather solutions enable remarkable efficiency gains, digital transformation, the protection of people and investments while supporting sustainable and responsible operations.

We are scientists and explorers driven by passion, relentless curiosity, and the desire to create a better world. Backed by 85+ years of unmatched scientific leadership, our solutions increase maritime weather awareness and drive innovation.

