

Addressing climate change at ports

AN OPERATIONAL GUIDE

The new climate reality

Climate change is accelerating extreme and slow-onset climate impacts, especially at ports.¹



Extreme impacts: Sudden oceanic and atmospheric events like severe wind, thunderstorms, and heat waves



Slow-onset effects: Problematic changes to factors like sea level, wind, and waves/swell

The result: Since 2018, climate change has risen from the 10th environmental priority at ports to the 2nd.

Direct and indirect operational impacts of climate change

Direct

Infrastructure damages, safety, and health issues

Cost of downtime and lost productivity

Indirect

Changes in demand from broader environmental effects on trade

Degradation of other industries (fishing, energy, etc.) that also support ports

How to start thinking about modernization

A traditional, reactive posture to weather risks no longer allows ports to meet the demands that climate change places on them.

A modern, data-driven approach allows ports to:

1. Adopt a proactive approach to climate change
2. Optimize their just-in-time operations
3. Enhance safety and decision-making
4. Confidently manage the risks related to extreme weather

This approach is attainable using proven, readily available, cost-effective weather sensors and related solutions.

How better weather data meets ports' most important needs

1

It improves operational efficiency.



With more accurate information on prevailing weather and nowcasts, **ports can optimize their operations and protect personnel before the storm hits**. Aside from averting major accidents, this has serious implications for day-to-day operational continuity.



They also **gain objective validation for their decision-making**, which can be important in post-event investigations or even litigation.

2

It helps avoid PR and reputational damages.



In today's instantly connected world, **PR and reputational damages can stick with a company** long after a disaster takes place and is resolved.



Good weather intelligence and data-driven decisions can **help leaders demonstrate diligence** to the public, regulators, and other parties when it counts.



Port customers and other outside stakeholders are increasingly aware of a port's posture toward weather-related risks — and whether they're being proactive or just hoping for the best.

3

It improves risk assessment and management.



Extreme weather caused by climate change **increases risks to infrastructure, business continuity**, and the safety of vessels and people.



With better data, ports can **accelerate weather risk assessments and response plans** — and be more confident of their outcomes.



Ports can also make **objective, reliable budget allocations** for mitigating weather-related risks.

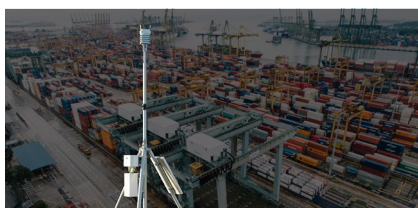
Embracing new weather data also **puts ports a step ahead with the “twin transition” of digital transformation and sustainability development** — topics they must address intelligently in the coming years.



Frequently used Vaisala technologies



WindCube® Scan lidar
providing 3D, spatial
wind data at ranges
even beyond 10km



**Vaisala Connected
Compact Station
BWS500 for Ports**
for hyperlocal,
continuous
weather data



**AWS310 weather
station** bundling
essential port and
coastal weather
observations,
with meteorological
calculations
and reports

How does your current setup stack up?

Legacy practice	Modern alternative
Forecasting from national weather services or news	Hyperlocal nowcasting that combines many data sources
Single-function, traditional wind or weather stations	Comprehensive, highly accurate weather stations measuring all key weather parameters
Manual (or non-existent) data processing, sharing, and alerting	Instant, cloud-enabled data management and alerting
Generalized port-area weather awareness	Full dome of awareness capturing different weather behaviors for different infrastructures/locales
Difficult decision-making made on long time scales	Up-to-the-second decision-making using trustworthy, objective information
Single weather station	Broad network of weather stations covering the port area with surroundings

Storm's coming. But you'll be prepared.

Vaisala provides accurate information on prevailing weather conditions and nowcasts, enabling ports to optimize their just-in-time operations, enhance safety, and manage the risks related to extreme weather before it occurs.

We're ready to talk with you and plan for a more secure, less blustery future.

Vaisala is here to help

Weather and environmental insights are the greatest catalysts for successful maritime operations — both onshore and offshore. From sensors to systems and digital services, Vaisala empowers maritime leaders to confidently meet new challenges and harness new opportunities.

Our customers depend on Vaisala to:



**Master the weather
to master the sea**



**Leverage oceans
of insight**



**Embrace the currents
of innovation**



**Become champions
of sustainability**

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