

# VAISALA

## Air Quality Solutions for Ports

Continuous monitoring and prediction  
are the first steps to manage emissions





# Air Quality is the #1 Environmental Priority for European Ports

Emissions from vessels, port operations, and related land traffic present a serious environmental health issue in major ports. According to a report by the Centre for Energy, Environment and Health\*, international maritime traffic is the cause of more than 50 000 premature deaths every year in Europe alone.



The good news is that ports are taking this issue seriously. In a recent survey based on data from 91 European ports, air quality was found to be the number one environmental priority, with a similar trend seen in ports globally.

## Do You Know the Air Quality in Your Port?

Ports have many exceptional characteristics in terms of air quality. Many port operations generate emissions, but ports are also often surrounded by other significant emission sources such as industrial facilities or busy roads. Furthermore, 90% of ports in Europe are close to densely

populated urban areas. Often the true origin of polluted air is hard to identify, especially with varying weather conditions affecting the dispersal of pollutants.

## Understanding Begins With Monitoring

Implementing an air quality monitoring network in the port zone provides real-time situational awareness of pollution levels, enabling port authorities to take timely measures based on hard data to improve air quality in and around the port.

### Benefits of Real-Time Air Quality Monitoring

- Minimize exposure to pollutants and potential adverse health effects
- Support environmental compliance and reporting
- Verify effectiveness of pollution-control measures
- Proactively mitigate pollution incidents
- More accurate understanding of origins of polluted air

\* *Assessment of Health-Cost Externalities of Air Pollution at the National Level using the EVA Model System, in Centre for Energy, Environment and Health Report series, CEEH Scientific Report No 3, ISSN 1904-7495.*

# Vaisala Air Quality Solution for Ports



Vaisala Air Quality solution for ports consists of a network of compact air quality sensors and weather stations, complete with data acquisition and visualization software, as well as optional air quality dispersion modeling.



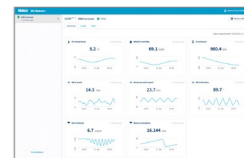
Air Quality Transmitter AQT530

**Vaisala Air Quality Transmitter AQT530** is the ideal monitoring and measurement sensor for port environments providing best-in-class accuracy, simple deployment, easy integrations, and reliability over a long service life. AQT530 measures the most common gaseous pollutants (NO<sub>2</sub>, NO, CO and O<sub>3</sub>) as well as particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>).



Beacon Station BWS500

**Beacon Station BWS500** is a powerful plug-and-play weather station that provides measurements, data collection, and data visualization in one compact environmental monitoring solution that enables operators to monitor conditions around their port. It accurately captures wind speed, wind direction, air pressure, temperature, humidity, and rainfall data for a localized area and delivers it via a secure, wireless data transfer for effective forecasting and planning. BWS500 includes Vaisala Beacon Edge Gateway EGW501, Vaisala Weather Transmitter WXT536, powering equipment, and mounting accessories.



Wx Beacon cloud

**Vaisala Wx Beacon cloud software** collects and visualizes measurement data from the station. Once you have an account in Vaisala Wx Beacon, you can easily share the data to third-party services and systems through an open API.

**Dispersion models**, provided through our partners, can further improve situational awareness of air quality in ports. The models provide a better understanding of emission sources as well as the spread of pollutants in the port zone and surrounding areas, for example in the case of an accidental release of emissions.

# The weather affects maritime operations more than any other factor. We'll help you master it.

Weather and environmental insights are the greatest catalysts for successful maritime operations— onshore and offshore.

From sensors to systems and digital services, Vaisala provides actionable insights that empower stakeholders to confidently meet new 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 clean and responsible operations.

## Why Vaisala?

We are scientists and explorers driven by passion, relentless curiosity, and the desire to create a better world. Our 85+ years of innovation and global impact are reflected in our guiding principles for maritime:



### Master the weather, master the sea

Vaisala enables stakeholders to harness incredible new possibilities while facing increased severe weather risks driven by climate change. We do this by providing the most advanced weather and environmental insights available anywhere. Guided by our weather measurement expertise, we're advancing maritime operations and empowering today's leaders to master the sea like never before.



### Currents of innovation

Maritime is evolving, and the currents of innovation are taking us to a more sustainable and weather-aware industry. Vaisala is the world's most trusted partner for helping maritime leaders navigate this evolution. Fueled by our proven scientific leadership and innovative spirit, we have led the way in providing unparalleled weather and environmental solutions across a multitude of industries for generations. We give maritime stakeholders the most comprehensive weather intelligence available so they can innovate across their entire ecosystem to protect of people, resources, and infrastructures.



### Oceans of insight

The maritime industry is a complex ecosystem, with valuable information to be found everywhere. In the atmosphere. In the water. In the movements and topographies of the sea. In complex offshore and onshore hubs of commerce. Vaisala's integrated, end-to-end weather solutions are uniquely capable of transforming oceans of information into concrete, practical insights to enable better decision making. These insights turn uncertainty into confidence, risk into readiness, and potential into power. Our preeminent weather technologies give maritime stakeholders a new competitive advantage: the ability to derive previously unattainable insights from everything around them.



### Champions for sustainability

Vaisala partners with maritime stakeholders to support a proactive, informed approach to navigating sustainability initiatives. Our unsurpassed onshore and offshore weather intelligence helps the maritime industry achieve cleaner and more responsible operations, stay ahead of regulatory pressures, and confidently manage risks related to extreme weather. This partnership also strengthens the health of Earth's oceanic ecosystems and the communities of which we are all part.



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