



Norway: Real-Time Air Quality Monitoring

Protecting public health and driving environmental policy



(Photo courtesy of Åsne Løseth / Oslo Municipality)

Overview

Accurate air quality data is essential for protecting public health and helping to drive environmental policy in modern cities. In Oslo, Norway, where air pollution levels are closely monitored and publicly reported, uninterrupted access to reliable data is critical.

Working together with our partner Scanmatic AS, Campbell Scientific supported the delivery of a robust, real-time air quality monitoring solution for the City of Oslo. Scanmatic led the system design and integration, combining industrial communications, infrastructure, and control systems with Campbell Scientific data acquisition technology. Together, we helped strengthen Oslo's ability to collect, manage, and share trusted environmental data.

The result is a resilient monitoring network that provides continuous insight into urban air conditions and supports both operational decision-making and public transparency.

The Challenge

Oslo operates an established network of air quality monitoring stations that measure pollutants such as particulate matter and nitrogen oxides. These measurements inform regulatory reporting, guide mitigation strategies, and provide real-time updates to the public.

To ensure continued confidence in the data, the city needed a system that could:

Case Study Summary

Application

Continuous insight into urban air conditions

Location

Oslo, Norway

Products Used

CR1000Xe

Participating Organizations

City of Oslo

Measured Parameters

Air quality, particulate matter, nitrogen oxide

- › Protect against data loss during communications or power interruptions
- › Integrate securely with central databases and public information platforms

Data gaps were not acceptable. Even short interruptions could affect reporting accuracy and erode public confidence. The city needed a solution designed for long-term, dependable operation.

The Solution

Scanmatic designed and implemented an upgraded data handling infrastructure built on the open architecture of Campbell Scientific data loggers. As a long-standing provider of environmental monitoring instrumentation, Campbell Scientific supplied rugged data loggers and data acquisition systems that form the core of each monitoring station.

Campbell Scientific data loggers are purpose-built for long-term and reliable environmental monitoring. With onboard processing and local data storage, they safeguard measurements even if network connectivity is temporarily unavailable. Once communications are restored, the acquired data is automatically transmitted, ensuring complete and continuous records.

Scanmatic integrated Campbell Scientific hardware with advanced communications technologies—including modern cellular connectivity—and ensured seamless data transfer to national databases and public reporting platforms. The collaboration combined Scanmatic’s expertise in system integration and infrastructure with Campbell Scientific’s proven data logging technology.

The Results

Continuous, Reliable Data

The City of Oslo benefits from an upgraded data handling infrastructure designed for long-term stability. Local data storage and reliable acquisition systems help prevent data loss and ensure a continuous data record. This continuity strengthens regulatory reporting and long-term trend analysis.

Environmental Management

With dependable, real-time measurements, city officials can make informed decisions based on accurate and current information. The system supports responsive actions related to traffic management, emissions control, and public health advisories.

Public Transparency

Air quality data is made available to residents using public platforms. Consistent and trustworthy reporting builds public confidence and allows citizens to make informed choices about daily activities.

A Future-Ready Platform

The open and scalable design allows the city to expand or adapt the network as requirements evolve. Additional sensors, updated communications methods, or new reporting standards can be incorporated without fundamental system redesign.



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View online at: www.campbellsci.ca/norway-real-time-air-quality-monitoring 