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# Case Study: Lyon - Birdz Real-Time Water Network Monitoring in France's Second Largest City

**birdz**

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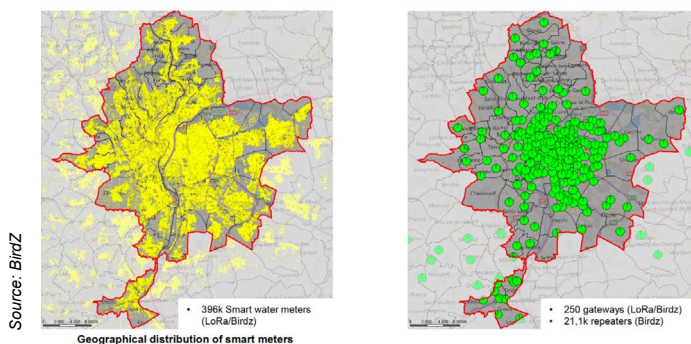
With more than 2.2 million inhabitants, the French city of Lyon is supported by an extensive water network managed by the Metropolis of Lyon and its water authority, Eau du Grand Lyon (EGL). As a public water authority, EGL defines water strategy, sets the price of water and manages day-to-day delivery of safe drinking water through a 4,000-kilometre pipe network that is serviced by 62 reservoirs and water towers, 11 water wells and 396,000 metering points.

Recognising the importance of better monitoring and management of its network, EGL undertook an extensive smart water monitoring rollout that was designed to improve monitoring of residential and business water consumption, water quality and pipe leaks.

The four-year rollout saw EGL work with remote water management provider Birdz to install 400,000 smart water G2 sensors and gateways, with integrated LoRaWAN connectivity across the metropolitan water network. The network includes smart meters, water quality probes, 100 fire and water hydrants, 50 KAPTAS quality sensors and 6,000 acoustic correlators (which detect leaks by measuring the sound of water flowing inside pipes).

The smart meters are all connected to the EGL business enterprise resource planning system. Birdz has also provided a management platform that correlates incoming data and presents it on a customised dashboard, showing key performance indicators (KPIs) including volume of water supplied, volume of water consumed, apparent losses, grid output, linear loss index (LLI) and night-time flow.

**Figure 1: Distribution of smart meters and LoRaWAN gateways**



The availability of real-time data about the Lyon water network's operations has proven to be a significant step up from automated meter-reading (AMR) solutions that only

provide data at monthly or quarterly intervals. Advanced metering infrastructure, by contrast, enables hourly or daily data transfer and uses LoRaWAN's highly penetrative signal to reach sensors monitoring underground water assets across the city. This ensures that events such as leaks or breaks are detected immediately, allowing EGL to dispatch a maintenance crew well before the leaks become a problem.

Better and more timely data also supports more flexible billing practices, with EGL able to read a meter at any point in time without having to organise a physical site visit. It has also helped the company meet demanding KPIs that require 98% of smart meters to send a daily update or else face the threat of financial penalties.

## BENEFITS

As EGL's comprehensive network monitoring infrastructure was progressively rolled out, its value in improving water network quickly became clear.

Using the Birdz environment, network managers were able to find, identify and repair more than 1,200 water leaks in the Lyon water distribution network. Network improvements saved 1 million cubic metres of water annually, with progressive remediation of network faults contributing to an 8% overall increase in water network efficiency – from 77% in 2014 to 85% in 2018.

The new, data-rich environment has also improved real-time reporting for consumers. They have been moved to monthly billing cycles based on real consumption, and receive notifications when there are problems like a leak, meter problems or tampering.

Throughout the project and beyond, the LoRaWAN network has continued to operate seamlessly – which is why, Birdz CEO Xavier Mathieu explained, the company relies on LoRaWAN to support projects that often run to 15 years or longer: *"We need to have a long-term view and commitment for our connectivity technology," Mathieu said. "LoRa devices' global adoption and growing ecosystem are proof to our customers that this technology is the leading and lasting contender for smart metering use cases."*



[Read the whitepaper](#)

