Digitalisation Action Plan for the Water Sector

WE DATA EUROPE'S CONTRIBUTION TO THE EUROPEAN COMMISSION'S CALL FOR EVIDENCE ON THE DIGITALISATION ACTION PLAN FOR THE WATER SECTOR

EXECUTIVE SUMMARY

Europe is home to **100 million people living under seasonal water stress**, and the issue of water scarcity spans the whole continent extending across various river basins, from Catalunya to Belgium and Eastern European Regions[1].

In addition, the EU population is unevenly distributed, with a steadily growing concentration of people and socio-economic activities in urban areas over recent decades. According to Eurostat, 75% of EU residents now live in cities and suburbs[2]. This higher density drives greater water withdrawals for public supply locally, making **urban areas particularly vulnerable to drought and water scarcity**.

As recognised in the European Water Resilience Strategy[3], **digitalisation holds significant potential** to transform water management and promote sustainable water use.

Smart water metering is a **mature and readily available technology** that can empower consumers to save water, facilitate leak detection, strengthen the water-energy nexus in buildings and ultimately help the EU meet its 10% water efficiency target for 2030. Scientific evidence supports this claim: an open-ended study[4] shows that dwellings equipped with **individual smart water meters can reduce consumption by up to 25%**.

However, the deployment of the technology in buildings remains uneven across the Union, largely due to the absence of clear policy objectives and a common regulatory framework.

The upcoming Digitalisation Action Plan for the Water Sector presents a unique opportunity to change that and adopt an ambitious **European smart water metering deployment strategy.** Just as smart energy metering has transformed the way consumers manage their energy use, smart water metering will be an essential pillar of Europe's efforts to improve water efficiency.

To make this vision a reality, we propose **concrete measures** to support a successful roll-out and maximise the benefits smart water meters offer to consumers while making buildings more water resilient.

[1] European Environmental Agency, *Water Scarcity Conditions in Europe*, 2025, available here.
[2] Eurostat, Urban-Rural Europe – Introduction, Statistics Explained, 2024, available here.
[3] European Commission, COM (2025) final, European Water Resilience Strategy, 2025, available here.
[4] Van Loo, Maarten, Steven Broekx, and Katrien Van Hooydonck. 2025. Evaluating the Role of Water Metering and Submetering in Reducing Water Consumption in Buildings. Final Report. Commissioned by WE Data Europe, VITO, available here.

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1. OUR POLICY RECOMMENDATIONS

1.1 Recommend Member States to Mandate Individual Smart Water Metering in All Buildings

Water efficiency starts with measuring. Every building, and every dwelling within multi-unit buildings, should be equipped with an individual water meter. Individual metering provides consumers with direct information about their water consumption and creates a clear financial and behavioural incentive to save water.

Without an individual meter, building occupants are not billed according to their own consumption but rather based on a flat-rate. As a result, unmetered households are short of incentives to use water wisely, detect and repair leakages or invest in water efficient appliances.

The deployment of **individual smart water meters** will further strengthen water efficiency efforts by giving households and businesses access to high-frequency consumption data[5]. This empowers consumers to make informed decisions about their water use while also enabling the rapid identification of leaks and unusual consumption patterns, helping to reduce unintentional water losses in private facilities.

Building on the **guiding principles for Water Efficiency First**[6]**,** the Digitalisation Action Plan for the Water Sector and its accompanying Smart Metering for All initiative should seize this opportunity and encourage **Member States to update their national legislation** by making individual smart water metering the standard in all units in residential and non-residential buildings. It should be noted that Member States supported the development of a Smart Metering for All initiative in the Council Conclusions on a European Water Resilience Strategy.[7]

This recommendation is supported by extensive scientific evidence

In 2012, the EEA published the report "Towards a more efficient use of water resources"[8], where water metering was considered to have a high potential to provide users with an incentive for more efficient water use. This was reaffirmed in 2017 by a report examining the role of pricing and non-pricing approaches to water management across Europe.[9]

The aforementioned studies clearly show that one common obstacle to the improvement of water efficiency in buildings is **the lack of metering infrastructure in the household sector**.

Our analysis of the legal framework in 19 Member States confirms this and evidenced that only four EU Member States have established a national mandate for individual cold-water metering in multi-unit buildings:

[5] High-frequency consumption data corresponds to intervals of up to 15 minutes, harmonised with electricity metering standards.
[6] European Commission, C/2025/3580 final, Commission Recommendation on guiding principles of water efficiency first, available here.
[7] Council of the European Union, 13390/25, Council conclusions on a European Water Resilience Strategy, available here.
[8] European Environment Agency, *Towards a more efficient use of water resources*, Publications Office, 2012, available here.
[9] European Environment Agency, *Water management in Europe: price and non-price approaches to water conservation*, 2017, available here.

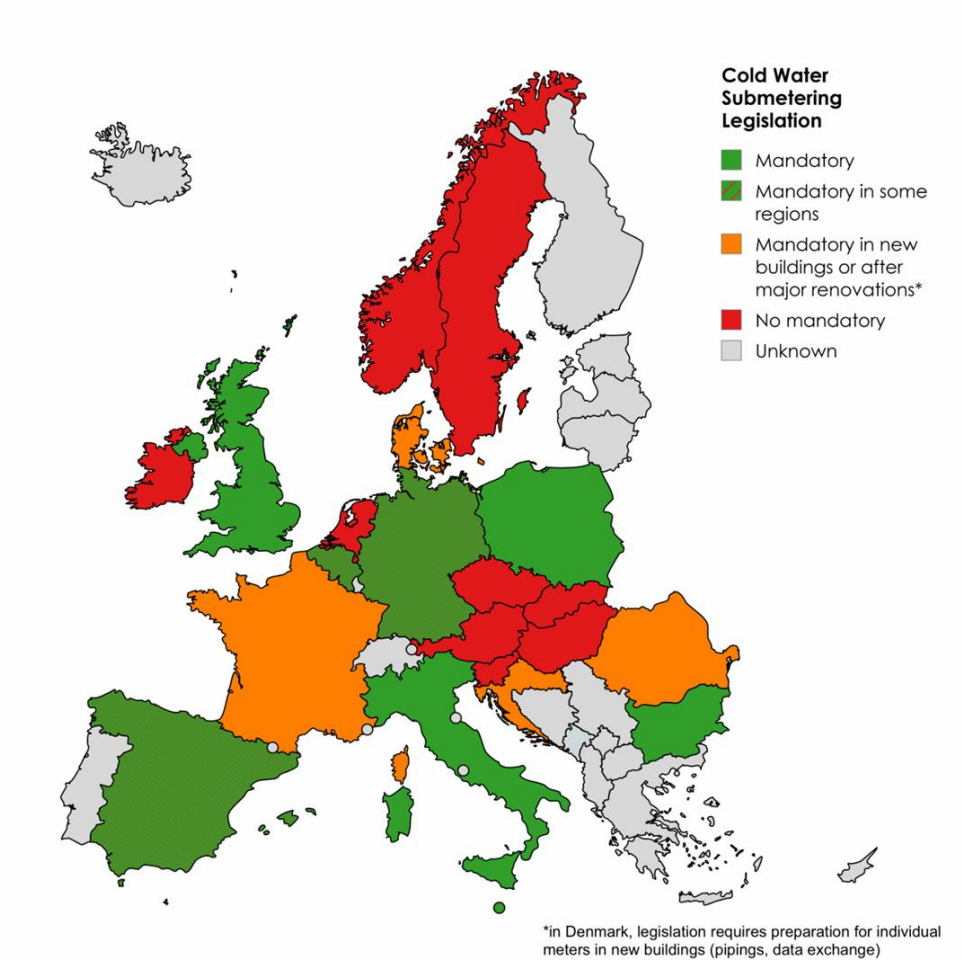

Figure 1 Cold water submetering legislation in Europe. Data were provided by WE Data Europe[10]

As of June 2026, only Bulgaria, Poland, Italy and Malta have established a comprehensive national legal obligation to install water submeters at individual dwelling level. In other Member States, requirements remain more limited, either applying at regional or local level or restricted to new buildings and those undergoing major renovations[11].

As legislation varies across Member States, the roll-out of water submeters differs significantly. While precise figures are not available, our research[12] has evidenced a clear pattern:

- **Countries with a national water submetering mandate** have achieved high penetration rates, often approaching 100%. (i.e. Bulgaria or Poland). Similar high penetration rates are observed in the Spanish autonomous regions that have established a mandate (Madrid and Andalusia are nearing 100% coverage).
- **Countries with regional or local mandates, or requirements limited to new buildings or major renovations**, show more moderate uptake, typically around 50% (i.e. 50% of private multi-unit buildings are metered individually in France, 40% in Croatia).

[10] Van Loo, Maarten, Steven Broekx, and Katrien Van Hooydonck. 2025. Evaluating the Role of Water Metering and Submetering in Reducing Water Consumption in Buildings. Final Report. Commissioned by WE Data Europe, VITO, available here.
[11] A more detailed overview of the legislation in Member States is available here.
[12] Van Loo, Maarten, Steven Broekx, and Katrien Van Hooydonck. 2025. Evaluating the Role of Water Metering and Submetering in Reducing Water Consumption in Buildings. Final Report. Commissioned by WE Data Europe, VITO, available here.

- **Countries without any mandate** show low penetration rates. (i.e. Sweden is below 15% of coverage).

These findings indicate a strong correlation between the scope of regulatory requirements and the level of water submetering uptake in buildings, evidencing the importance of comprehensive national mandates to accelerate the deployment of this technology.

1.2 Set Ambitious Targets Supporting Smart Water Metering Deployment

The **Digitalisation Action Plan for the Water Sector** should set a clear pathway for the deployment of individual smart water meters in buildings, and set a target for:

- **All new buildings equipped by 2030**
- **All buildings equipped by 2035**, ensuring no one is left behind.

Operationalising the Deployment Target

To achieve this, deployment **progress must be tracked regularly**. A first EU-wide assessment of smart water metering deployment across Member States, conducted in partnership with industry stakeholders and encompassing individual smart water meters, should be carried out as part of the Water Resilience Strategy's implementation review.

This assessment should be followed by **biannual benchmarking of deployment rates**, integrated into the Strategy's scheduled implementation checks in 2027 and 2029. This will maintain political momentum and ensure all Member States stay on course towards full coverage.

A Timeline Building on other Smart Metering Deployment Successes

This recommendation follows the EESC's Own-Initiative Opinion on the Blue Deal Accelerator[13], calling Member States to set clear milestones, aiming for substantial coverage by 2035.

Such timeline is both realistic and achievable for Member States. A comparable transition has already been successfully carried out in the heating sector, where the revised 2018 Energy Efficiency Directive[14] required all heat cost allocators and individual heat meters to become remotely readable from October 2020, with full deployment and retrofitting to be completed by 1 January 2027.

This demonstrates that Member States, metering service providers and building owners are capable of implementing large-scale metering upgrades within a similar timeframe. Building on this experience, the proposed Digitalisation Action Plan for the Water Sector would provide sufficient time for Member States to deploy individual smart water meters or retrofit existing analogue meters by 2035 while allowing for the necessary planning.

International experience further confirms the feasibility of this target. In England, the government has adopted in 2024 its revised draft regional and water resources management plan[15], and has committed to significantly accelerating the deployment of smart water meters across both residential and non-residential sectors, with the aim of increasing residential smart metering coverage from around 12% in 2025 to more than 80% by 2035. This demonstrates that a **rapid scale-up of smart water metering can be achieved within a short period** when supported by a clear policy framework.

[13] European Economic and Social Committee, CCMI/261, Blue Deal Accelerator – technology, skills and finance for a water-resilient future (own-initiative opinion), available here.
[14] European Commission, Directive (EU) 2018/2002, available here.
[15] Revised England's draft regional and water resources management plan, available here.

1.3 Introduce an EU-Wide Definition of Smart Water Metering

The EU has never defined what constitutes a smart water meter. The Digitalisation Action Plan for the Water is a chance to change that. A clear definition of what makes a meter smart will avoid a fragmented roll-out and missed savings opportunities, and ultimately ensure that the EU building stock's water resilience is future-proofed.

We recommend introducing **minimum requirements for what makes a meter smart**.

- Smart water meters should be **remotely readable** and enable **fully automated data collection**, eliminating the need for on-site meter reading. This excludes walk-by and drive-by technologies, which continue to rely on regular human intervention for data retrieval and significantly limit access to high-frequency consumption data.

- Smart water meters should enable consumers and building managers to **access high-frequency consumption data**[16] through a dedicated application, web portal or equivalent digital interface.

Ensure that Regulatory Frameworks do not limit the potential of smart water meters

Member States should ensure that their regulatory frameworks supports the full use of smart water meters abilities and allows the provision of high-frequency consumption data to consumers and building managers, and does not limit data provision to a certain frequency.[17]

1.4 Ensure the Competitiveness of the Smart Water Metering Market

The Digitalisation Action Plan for the Water Sector should promote a **competitive smart water metering market** and ensure fair competition between all market actors from the private and public, including water utilities and metering service providers.

In particular, it needs to be ensured that there are open tendering procedures for smart water metering roll-outs and that building owners can easily switch providers without unnecessary technical or financial barriers.

A competitive market environment will **encourage continuous innovation** in smart water metering services, accelerate the development of new functionalities and ensure that the benefits of digitalisation are accessible to the widest range of consumers.

[16] High-frequency consumption data corresponds to intervals of up to 15 minutes, harmonised with electricity metering standards.

[17] For example, the German Ordinance on the consumption-based billing of heating and hot water costs (Ordinance on Heating Cost Billing - HKVO 6a) requires building owners to provide monthly billing information to consumers whose consumption data is transmitted remotely. Although smart metering technologies enable much more frequent data provision, the current regulatory framework does not enable more granular feedback to consumers, thereby limiting the potential of smart meters to drive more informed decision-making and behavioural changes. The HKVO is available here.

1.5 Future-Proof the Measuring Instruments Legislation

1.5.1 Enable Remote Verification and Predictive Maintenance of Meters

The new generation of smart meters can now provide continuous data on their performance. Research and development to deliver reliable methods for remote verification and predictive maintenance of meters is progressing, with **market-ready solutions expected within the next few years**. This technological progress will allow verification and recalibration of meters to be based on their actual condition rather than on pre-defined time intervals.

These technological developments have the potential to shift meter verification and recalibration from a time-based approach to an actual **performance-based approach**. Rather than requiring physical inspections or replacement at predetermined intervals, meter accuracy could be assessed remotely and continuously throughout the device's lifetime. This would reduce unnecessary interventions, minimise the premature replacement of fully functional meters, lower compliance costs and decrease waste generation.

To enable this innovation to be mainstreamed, we recommend that the Digitalisation Action Plan for the Water Sector encourage the upcoming revision of the Measuring Instruments Directive[18] to **explicitly enable remote verification and predictive maintenance** for meters supporting this functionality. In parallel, further research, testing and pilot projects to validate these approaches and accelerate the deployment of best available technologies across the European market should be encouraged by the Action Plan.

1.5.2 Harmonise Meter Calibration Periods across Member States

Member States currently impose **different calibration periods for metering devices**. This includes smart water meters. However, these divergences are not supported by technical evidence.

For instance, in **Germany**, the calibration period for heat, hot and cold water meters is **fixed at 6 years**[19]. Whereas in **France**, the calibration period for the same devices is **fixed at 10 years**, despite referring to the same technology[20].

Current national differences create unnecessary fragmentation of the Single Market and impose unjustified compliance costs for metering service providers, housing owners and tenants.

Consistent with our recommendation to enable remote verification and predictive maintenance for meters, the Digitalisation Action Plan for the Water Sector should as a minimum propose the establishment of **harmonised EU rules on meters calibration periods**, as part of the upcoming revision of the Measuring Instruments Directive.

We suggest the following options for the harmonisation of calibration periods across Member States:

1) Relying on the manufacturer's performance-guarantee declaration as the basis for determining calibration periods. This would also allow for technological advancements to be reflected in calibration periods.

[18] European Commission, Directive 2014/32/EU, available here.
[19] German Measurement and Calibration Ordinance (MessEV), available here.
[20] French Decree No. 2001-387 of 3 May 2001 on the control of measuring instruments, available here.

2) Establishing a harmonised minimum EU calibration period, such as a standard 10-year calibration period for relevant meter types.
3) Where available, meters supporting remote verification and performance monitoring may use these functions to dynamically adjust calibration intervals.

With this approach, Member States would still have flexibility to adopt longer service lives, where appropriate, and depending on their national context.

1.6 Include a Dedicated Digitalisation Working Group in the Water Resilience Stakeholder Platform

We welcome the creation of a Water Resilience Stakeholder Platform to support the implementation of the European Water Resilience Strategy. Given the transformative potential of digital technologies for improving water efficiency and resource management, we recommend establishing a **dedicated working group on digitalisation within the Platform**.

This working group would provide a structured forum for Member States, industries and other stakeholders to exchange best practices and lessons learned on the deployment of digital water solutions, including smart water metering, ensuring that implementation challenges are identified early and tackled effectively.

2. BEST PRACTICES DRIVING THE UPTAKE OF SMART WATER METERING IN BUILDINGS

2.1 Integrate Smart Water Meter Deployment into Building Modernisation Strategies

2.1.1 Reduce Water Leakage Rates in Buildings

The deployment of individual smart water meters can significantly reduce water wastage in buildings by enabling the **early detection of leaks**. Through continuous monitoring of water consumption, smart water meters can generate automated alerts that are delivered directly to consumers via mobile applications, web portals, or other digital services. This enables building occupants and owners to **identify and address leaks more rapidly**, including low-flow leaks that might otherwise go unnoticed for extended periods. In addition to reducing water losses and associated costs, early leak detection helps prevent potential property damage and avoids unnecessary repair expenses resulting from prolonged leaks.

Recent evidence from an open-ended study[21] demonstrates the benefits of this approach, showing that dwellings equipped with individual smart water meters featuring leak detection functionalities **achieved an additional 10% reduction in water consumption** compared to dwellings equipped with standard digital water meters that did not support leakage detection.

2.1.2 Combine the Installation of Smart Cold and Hot Water Meter Deployment

The roll-out of individual smart cold water meters and domestic hot water meters[22] should be **coordinated and implemented simultaneously whenever possible**. Combining both deployments will reduce installation costs by minimising disruption for occupants by avoiding multiple interventions within dwellings. It will also enable building owners to leverage the same workforce possessing the same technical expertise and build on the same digital infrastructure.

2.1.3 Deploy Smart Cold and Hot Water Meters to Improve Sizing of Hot Water Installations

The deployment of smart cold and hot water submeters should be prioritised ahead of investments in domestic hot water production systems, including **boilers**, and **solar thermal installations**. Collecting detailed and disaggregated consumption data before such investments are made will provide building owners, and installers with the necessary data **to enable the most accurate sizing of this equipment** based on actual consumption of buildings, improving their performance, cost-effectiveness and affordability.[23]

[21] Van Loo, Maarten, Steven Broekx, and Katrien Van Hooydonck. 2025. Evaluating the Role of Water Metering and Submetering in Reducing Water Consumption in Buildings. Final Report. Commissioned by WE Data Europe, VITO, available here.
[22] The deployment of individual domestic hot water meters is mandated by the Energy Efficiency Directive (Article 15) in each unit of multi-unit buildings supplied by a collective source of hot water. They should be changed or rendered remotely readable by 1 January 2027.
[23] Techem, "Digital Heating Room: New Techem Service Optimises Heating Operations with the Help of Artificial Intelligence," press release, September 28, 2023, available here.

2.1.4 Ensure that All Buildings are Ready for Smart Water Metering

In some older buildings, units are supplied through multiple water pipes, creating technical and economic challenges for the deployment of smart water meters.

Denmark[24] offers a leading example of how to address this bottleneck through legislation. Its national law requires **all new buildings** and **buildings undergoing major renovations** to be equipped with plumbing infrastructure that enables the individual measurement of water consumption, ensuring they are **ready for the installation of water meters**.

In line with the Council Recommendations on the New European Bauhaus[25], this approach could serve as a model best practice within the Digitalisation Action Plan for the Water Sector, helping to remove barriers and accelerate the adoption of smart water metering in buildings across Europe.

2.2 Recognise the Risk-Reduction Benefits of Smart Water Metering in Buildings

We recommend that the Commission recognises the development of insurance-based incentives for buildings equipped with smart water metering systems as a best practice.

Water damage is one of the most significant sources of insurance claims for residential buildings. Industry data indicate that **water-related incidents account for nearly 30% of home insurance claims** and claims costs, representing billions of euros in annual losses at European level.[26] Furthermore, **1.5% of homes experience a water damage or freeze claim each year**, with an average cost of about **$15,400 per incident.**[27]

Early leak detection and unusual consumption alerts, as well as pipe-freezing alerts, enabled by smart water metering can therefore generate substantial financial savings for property owners, tenants and insurers, by reducing the frequency and severity of water-related damage.

[24] Danish Executive Order on Individual Metering of Electricity, Gas, Water, Heating and Cooling, BEK nr 563 of 02/06/2014, available here.
[25] Council of the European Union, 2025/0412 (NLE), Council Recommendation on the New European Bauhaus, available here.
[26] Insurance Times, Insurance Times (2021), Household water leak claims up by more than 30% for Q1 2021, available here.
[27] Insurance Information Institute, Facts and Institutes: Homeowners and renters insurance, available here.

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