



Roadmap for building ETV market acceptance and recognition: SPAIN

From cost to value perception, market acceptance and recognition of ETV as a voluntary environmental scheme supporting innovations uptake and diffusion in the water sector

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1. INTRODUCTION

1.1. About the roadmap

This document presents a roadmap for building market acceptance and recognition for a specific ETV use case and related business case in the context of: the Corporate Sustainability Reporting Directive (CSRD), European Sustainability Reporting Standards (ESRS) and the EU taxonomy for sustainable activities capitalising on the potential and role of the ETV identified in a LIFEproETV Policy Brief: How the ETV scheme may foster the EU green transition?¹

1.2. Context for the roadmap

Although discussions on the final stipulations of the delegated and implementing acts are ongoing, we considered the content of the draft documents as a starting point for defining the potential role of the ETV scheme in verifying functionalities and characteristics of environmental technologies in terms of their impact on sustainability development in companies. We focused on the topic of “Water sector in Spain”.

The water sector in Spain presently confronts a multitude of challenges attributed to its arid and semi-arid climatic conditions, exacerbated by the effects of climate change, thereby elevating concerns regarding water scarcity. Furthermore, governmental authorities have instituted specific targets aimed at ameliorating water quality, enhancing digitalization, curtailing energy consumption, and optimizing water utilization, among other objectives. This prevailing circumstance positions the water sector within a transitional phase, necessitating the development and adoption of novel methodologies and operational paradigms to effectively realize these articulated goals. This period of transformation renders the water sector amenable to exploration of its synergies with the Environmental Technology Verification (ETV) scheme, exemplifying ETV's potential as a catalyst for facilitating the transition in a well-established sector such as water resources management, with the potential for subsequent replication across other sectors undergoing transformative processes.

The execution of the roadmap will entail the active participation of various stakeholders within the water sector. Presently, the water sector in Spain comprises approximately 1.300 Drinking Water Treatment Plants, 900 desalination plants, and roughly 2.000 wastewater treatment plants². These installations are under the operational purview of 483 distinct water utilities, responsible for the processes of catchment, potabilization, distribution, and depuration³. Among these utilities, 170 plants are publicly owned entities, 160 are privately operated by commercial enterprises, 106 operate as public-private partnerships, and 48 are managed by municipal services⁴. Additionally, the Cleantech sector demonstrates a notable presence with 750 identified start-up companies exhibiting close affiliations with innovations in the water sector⁵. Furthermore, Spain features several research and innovation centers dedicated to fundamental investigations in water research, bolstered by public funding sources, including the Ministry of Ecological Transition.

¹ https://lifeproetv.eu/wp-content/uploads/2022/09/d.B.2.1-Policy-Brief_ETV-Final-1.pdf

² <https://www.iagua.es/noticias/espana/locken/17/07/11/infraestructuras-agua-espanolas-numeros>

³ <https://ranking-empresas.economista.es/sector-3600.html>

⁴ https://www.aeas.es/images/Doc_Es_Nacional/2022/Trptico_ingls_reducido.pdf

⁵ <https://elreferente.es/scouting/mapa-ecosistema-cleantech-espana-2023-icex/>

Considering the dimension of the CSRD, the ESRS and the EU taxonomy as an overarching EU policy as well as global interest in ensuring sustainable performance of companies, the experiences from demonstrating the utility of the ETV use case and the accompanying business case have strong potential for transfer and replication towards other countries and verification bodies and towards other environmental objectives covered in the EU taxonomy delegated acts.

This roadmap has been developed following an analysis of legal documents and a series of interviews and online meetings with relevant stakeholders. It includes goals, a problem definition, a map of stakeholders and a set of actions to: position the ETV system in the national sustainability financing and reporting ecosystem, to build strategic partnerships and to ensure awareness among environmental technology providers and users about the role of the ETV system in sustainability transition processes. A detailed analysis of these documents is included in the full version of the Roadmap which is attachment to this document.

2. CURRENT ETV STATUS AND RELATED CHALLENGES

Water treatment and monitoring is one of the main domains within the scope of Environmental Technology Verification (ETV). As of the most recent update available in October 2023, ETV has successfully verified 21 water treatment and monitoring technologies out of the total 54 technologies subjected to verification under the ETV.

In the context of Spain, it is noteworthy that two technology providers based in Spain have attained verification for their water treatment and monitoring technologies (Biodhy Tres and RichWater). It is important to highlight that, in the absence of a domestic Verification Body (VB) within Spain, these verifications were conducted by European Verification Bodies, namely RINA from Italy and IETU from Poland.

The relatively modest count of verified water treatment and monitoring technologies in Spain may be attributed to several factors. Foremost among these factors is the limited awareness of the ETV scheme within the Spanish technology provider community. This lack of awareness hampers the widespread adoption of ETV. Additionally, it should be noted that the regulatory framework in Spain does not align well with the ETV standard. In fact, ETV is not explicitly referenced in any existing Spanish regulations or programs, as ascertained during the initial phase of the LIFEproETV project.

Paradoxically, there are notable connections between ETV goals and Spain's strategy for science, technology, and innovation. This strategy is designed to stimulate the development and adoption of new technologies, foster an environment conducive to identifying innovative technologies, and incentivize their adoption by private enterprises and public authorities. These objectives align closely with those of ETV. Nonetheless, the previously mentioned lack of awareness also extends to the administrative sector in Spain, which impedes the integration of ETV into policy recommendations or program implementations.

3. THE CHALLENGE FOR THE ETV USE CASE IN SPAIN

The challenge for Spain targeting the water sector lies in effectively implementing Environmental Technology Verification (ETV) to address the specific needs identified by relevant stakeholders and water associations.

4. GOAL DEFINITION

Since the European Commission took the decision in 2022 to discontinue its work on the EU ETV Programme, the organisations previously working within this programme now have to elaborate a market-oriented business model to continue their activities following the ETV system in accordance with ISO 14034 Environmental management – Environmental Technology Verification (ETV). First of all, they have to overcome the misinterpretation by stakeholders concerning the difference between the European ETV Programme and the ETV scheme. Many organisations are in the opinion that, as a result of the decision of the European Commission to end the EU ETV Programme, the ETV system is no longer supported and has lost its credibility. This means that the ETV bodies in Europe will have to build new partnerships with market players and to explain their role in value chains, while positioning their competencies to:

- provide impartial and credible confirmation of the performance, innovation and environmental benefits of new environmental technologies, so to create a framework for innovative pre-commercial procurement, technology benchmarking by individual companies or a group of companies, as well as conditions for elaborating new standards by branch organisations;
- support innovative companies and research and development institutes in demonstrating and confirming the added value of their new environmental technologies in concrete application settings compliant with potential clients' sustainability transition targets and the EU taxonomy;
- support public sector organisations in defining new standards for green procurement as a result of which the public sector can contribute to environmental technology development in the country and spur the implementation of new technologies;
- provide stakeholders, including technology users, branch organisations and financial institutions with reliable and useful information on verified environmental technologies, as a means to support their investment project preparation process, investment project due diligence process (recognition of the ETV statement by the financial sector), as well as to give insight in the way new technologies can contribute to companies' green transition targets (CSRD, ESRS and EU taxonomy).

Considering the above the main goals to be achieved in addressing the challenge are:

- G1** – To facilitate the market incorporation of innovative technologies in the water sector by implementing strategies and initiatives that streamline the adoption and commercialization process, enhance market acceptance, and drive the integration of innovative water technologies into existing systems and practices.
- G2** – Standardizing the technology verification process within the water sector and positioning it effectively within the broader landscape of verification and certification for water materials and solutions.
- G3** – To foster effective knowledge transfer and collaboration among various stakeholders beyond the water sector, facilitating the exchange of expertise, best practices, and innovative solutions.

5. PROBLEM DEFINITION

The following specific problems/barriers have been defined for the ETV use case

- Communication problem/barrier: (Table 1) Lack of effective communication on the innovative and environmental advantages to the companies in need of water efficient technologies

- Cultural problem/barrier: (Table 2) The absence of standardized testing protocols, particularly tailored to accommodate innovative technologies;
- Market problem/barrier: (Table 3) The lack of confidence in the performance and economic feasibility of incorporating innovative technologies poses a significant barrier in solving the needs of the water sector

For each problem/barrier, a dedicated table was prepared (Tables 1, 2, 3, 4) containing the following information:

- Cause
- Current situation
- Objective(s)
- Solution(s)

6. • KEY STAKEHOLDERS

Table 1. Regulatory problem/barrier for Spain

REGULATORY	LACK OF EFFECTIVE COMMUNICATION ON THE INNOVATIVE AND ENVIRONMENTAL ADVANTAGES TO COMPANIES IN NEED OF WATER EFFICIENT TECHNOLOGIES
Cause	<p>Companies may have limited networking channels or platforms that facilitate communication and collaboration with companies beyond the water sector.</p> <p>Companies may receive incomplete or inaccurate information about water-efficient technologies, leading to misconceptions or doubts about their effectiveness or economic feasibility.</p>
Current situation	Water-efficient technologies often involve complex technical details and terminology, making it challenging for companies to grasp their advantages and potential applications.
OBJECTIVE	
OBJ1	Create clear, concise, and easily understandable communication materials that highlight the innovative features, performance metrics, and environmental benefits of water-efficient technologies.
OBJ2	Showcase real-world case studies and success stories that highlight the successful implementation and outcomes of water-efficient technologies.
OBJ3	Foster the implementation of water footprint as and harmonized concept to communicate the water efficiency of different organizations and companies
SOLUTIONS	

ETV generates verified performance data and case studies that demonstrate the effectiveness and benefits of water-efficient technologies. Access to reliable performance data helps overcome information gaps and provides evidence-based information to companies, supporting their decision-making process.

ETV testing protocols provide evaluation metrics to assess the water efficiency of technologies. These metrics can align with the methodologies and indicators used in water footprint assessments, enabling consistent and comparable evaluation of technologies in terms of their water usage and impacts.

ETV can be used to promote water-efficient technologies that have undergone rigorous verification processes. By highlighting ETV verified technologies in the market, ETV can raise awareness and encourage the adoption of water-efficient solutions, ultimately contributing to the reduction of water footprints.

Opportunities There is growing awareness and understanding of the water footprint concept among various stakeholders, including businesses, governments, and civil society. The water footprint is recognized as a valuable tool for assessing and managing water-related risks, impacts, and sustainability.

KEY STAKEHOLDERS

Who and Why Technology providers: They can use ETV for their water-efficient technologies, providing verified performance data related to water consumption and efficiency.

Who and Why Water footprint associations provide expertise, guidance, and standard methodologies for water footprint calculations, and their collaboration can enhance the credibility and relevance of ETV within the water footprint context.

Who and Why Companies in need to reduce water consumption or improve water footprint; by considering the water footprint in their operations and decision-making processes end users can drive demand for water-efficient technologies that have undergone ETV process

Table 2. Cultural problem/barrier for Spain

CULTURAL	<h2>NO HARMONIZATION OF THE TESTING PROTOCOLS, SPECIALLY FOR INNOVATIVE TECHNOLOGIES</h2>
Cause	<p>Technological Advancements: Keeping up with water technological innovations, and developing standardized testing protocols for each technology can be challenging and time-consuming.</p> <p>Sector-Specific Requirements: The water sector encompasses a wide range of applications, such as water treatment, wastewater management, and irrigation systems. Each application may have unique requirements and performance indicators, making it difficult to develop a one-size-fits-all approach to testing protocols.</p>
Current situation	<p>There are numerous standards and protocols followed in the water sector for reference materials, for laboratory procedures, etc. However, when it comes to the evaluation of technologies, in-house testing has become the most common strategy to communicate technological performance between providers and potential buyers.</p>

OBJECTIVE

- OBJ1** Develop clear guidelines and frameworks for testing protocols that provide step-by-step procedures, performance indicators, and evaluation criteria. These guidelines should be accessible, transparent, and widely disseminated to ensure consistent implementation across the water sector.
- OBJ2** Promote knowledge exchange platforms, workshops, training programs, and conferences to enhance understanding and awareness of testing protocols and their importance. Focus on capacity building initiatives to develop expertise within the water sector for the implementation of harmonized testing protocols.

SOLUTIONS

ETV provides clear guidelines and frameworks for technology verification, including specific testing protocols and evaluation criteria. These guidelines can serve as a reference for the development of harmonized testing protocols within the water sector, ensuring consistency and clarity in the evaluation process.

Use the LIFEproETV exchange activities, such as workshops, seminars, and training sessions, to enhance understanding and awareness of technology verification processes. These activities can promote capacity building within the water sector, enabling stakeholders to better understand and implement harmonized testing protocols.

- Opportunities** The water sector already has established verification and certification programs in place for certain aspects, reference materials, laboratory procedures or efficiency standards. Leveraging existing programs and building upon their expertise can expedite the implementation of harmonized testing protocols. Integrating ETV with these programs can enhance their effectiveness and credibility.

KEY STAKEHOLDERS

- Who and Why** Water Utilities and end users: Their involvement provides valuable feedback, real-world insights, and requirements for testing protocols. Engaging water utilities ensures that protocols address practical operational considerations and meet the needs of end users.
- Who and Why** Testing/certification organizations. These organizations provide expertise in standardization processes, ensure compatibility with existing standards, and promote wider acceptance and recognition of harmonized protocols.
- Who and Why** Technology Manufacturers: Their involvement ensures that protocols align with industry requirements, practical considerations, and the specific characteristics of different technologies.

Table 3. Market problem/barrier for Spain



LOW MARKET INCORPORATION OF INNOVATIVE TECHNOLOGIES WITHIN THE WATER SECTOR

The water sector, especially public utilities, can be risk-averse due to concerns about operational disruptions, performance uncertainties. This risk aversion can create resistance to adopting new technologies and a preference for proven, established solutions.

Most of the potential buyers make low risk investments (with already known providers or technologies) having the most innovative ones more barriers for their market acceptance

OBJECTIVE

Conduct and promote comprehensive performance evaluations, independent verification, and case studies of innovative technologies. Sharing reliable and transparent performance data builds trust and confidence among potential buyers, regulators, and investors, facilitating market incorporation.

Develop supportive policy frameworks that incentivize the adoption of innovative technologies. This can include streamlined regulatory processes, clear guidelines, performance-based standards, and financial incentives to encourage technology implementation and remove regulatory barriers.

Implement targeted awareness campaigns and educational programs to increase knowledge and understanding of the benefits, performance, and potential of innovative water technologies. This can involve disseminating success stories, organizing workshops and training sessions, and utilizing digital platforms for information sharing.

SOLUTIONS

Reliable Performance Data and Case Studies: ETV generates reliable performance data and verified case studies that demonstrate the effectiveness and feasibility of innovative water technologies. This data and evidence help overcome the lack of demonstrated performance, providing potential buyers and investors with valuable information to make informed decisions. ETV-verified case studies serve as compelling examples of successful technology implementation, reducing perceived risks and encouraging market adoption.

ETV verification can help innovative technologies meet regulatory requirements and standards. ETV can consider regulatory frameworks during the verification process, ensuring alignment with legal obligations. Obtaining ETV verification can simplify the regulatory compliance process, removing a significant barrier to market incorporation.

The ETV process involves disseminating information, sharing verified performance data, and promoting success stories, creating an informed market that understands and values these technologies.

There is a growing interest and recognition of the importance of innovative technologies in addressing water sector challenges. Stakeholders, including water utilities, regulatory bodies, and industry associations, are increasingly acknowledging the potential of these technologies to improve water management, enhance efficiency, and mitigate environmental impacts.

KEY STAKEHOLDERS

Water utilities and end users. Their involvement is necessary for providing feedback, sharing challenges, and expressing their needs and preferences.

Technology providers to understand and communicate the benefits of ETV through the ETV verification reports. They can use ETV as a market strategy to reach a wider range of buyers.

Government agencies and policy makers can collaborate to align policies with ETV standards, provide financial support, and promote ETV certification as a recognized means of technology assessment.

Funding agencies and investors: They can contribute financial resources, offer investment opportunities, and prioritize ETV-certified technologies in their funding decisions, thereby incentivizing technology manufacturers to seek ETV verification.

7. KEY STAKEHOLDERS MAP

For each category of problem/barrier, the following key stakeholders were identified:

- Communication:
 - Technology providers: Can employ ETV for their water-efficient technologies, furnishing validated performance data concerning water consumption and efficiency.
 - Water footprint associations: Can utilize ETV to enhance the credibility and reliability of water footprint calculations for technologies and products
 - Companies in need to reduce water consumption or improve water footprint: They can use ETV in order to obtain credible verification of the performance and efficiency of their water-saving technologies or practices
- Cultural:
 - Water utilities: Can contribute to defining relevant testing requirements during the ETV process aligning them with the utilities' existing infrastructure, operational procedures, and regulatory requirements
 - Testing/certification organizations. Ensuring compatibility with existing standards facilitates seamless integration of ETV results into existing frameworks, making it easier for stakeholders to adopt and implement ETV verified technologies
 - Technology Manufacturers: They can contribute in making ETV protocols tailored to incorporate real-world testing scenarios that reflect the technologies' operational conditions
- Market:
 - Water utilities can share their unique operational challenges and pain points with the technologies being verified. This identification of challenges helps technology providers to tailor their solutions to address specific needs
 - Technology providers: can utilize ETV verification reports as empirical evidence of their technology's performance.
 - Government agencies and policy makers: Can endorse ETV verification as a recognized mechanism for technology evaluation
 - Funding agencies and investors Can accord priority to ETV-verified technologies in their funding allocations, thereby incentivizing technology providers to pursue ETV verification

The above-mentioned stakeholders shall be addressed and involved in the promotional campaign dedicated to the presented ETV use case and build the business case to be implemented in under the LIFEproETV project following a set of actions as proposed in the Action Plan presented in the following section.

For the roadmap preparation companies that provide certification of laboratory procedures and reference materials related to the water sector have been contacted and they identified that verification at a technology level is a lack in the certification process of the water sector. Therefore, they aim at contributing in the campaign providing a map of certification/testing where ETV can play a key role in this landscape as the reference procedure for technology performance verification.

Furthermore, organisations related to providing water footprint calculation to different companies have highlighted the potential links between the emerging water footprint calculation and ETV verified performance parameters, as a proof of low water consumption of specific technologies that can serve as a basis for the water footprint calculation.

Finally it is a general agreement, especially for big companies and water operators, that there is a need to boost the incorporation of innovative technologies in the different processes of the water sector in order to achieve the environmental and technological performance ambitions, as explained in the context section.

8. ACTION PLAN

For each problem category described in section 5 (regulatory, market, technological and cultural) a set of actions to be considered in the promotion campaign has been defined (Table 5).

Table 4. Actions and their impact on the achievement of the goals

ACTIONS	GOALS
Cultural	
<p>Establish standardized guidelines and protocols based on ETV in the water sector</p> <p>These guidelines would help in providing a clear and systematic framework for evaluating the performance and environmental impact of water technologies, enhancing credibility and acceptance in the industry.</p>	G1
<p>Facilitate multi-stakeholder consultations</p> <p>Such multi-stakeholder consultations foster collaboration and lead to standardized testing procedures that are widely accepted and implemented, promoting consistency and reliability in technology assessments.</p>	G2 G3
MARKET	
<p>Foster Research and Development: Encourage research and development initiatives in innovative water technologies by showcasing the value of ETV in validating and promoting their commercialization.</p>	G1 G2
<p>Engage Industry Associations: Collaborate with industry associations to endorse and promote ETV as a valuable tool for validating and differentiating innovative water technologies in the market.</p>	G3

Facilitate Technology Transfer: Promote the adoption of ETV-verified technologies in water-stressed regions

Provide Financial Support: Offer financial incentives, grants, or subsidies to technology providers to undergo ETV verification, making it more accessible and encouraging wider participation.

Communication

Develop Common Language: Encourage the adoption of standardized terminology and metrics in ETV reports and water footprint assessments to enhance clarity and comparability between different stakeholders.

Share Best Practices: Develop guidelines and manuals that provide practical guidance on how to combine ETV and water footprint assessment effectively, sharing best practices for data collection, analysis, and reporting.

G1
G2
G3

Establish Collaboration Platforms: Create forums, conferences, or working groups that bring together representatives from the water sector, industries, academia, and water footprint associations to share knowledge and experiences related to ETV and its relevance to water footprint assessment.

9. CONCLUSION FOR THE POLISH BUSINESS CASE AND ROADMAP

The promotional campaign in Spain aims to position ETV as a pivotal instrument within the water sector. This campaign has been thoughtfully tailored to meet the sector's specific requirements, informed by insights gathered from interviews with industry stakeholders. Its objectives are to first showcase ETV as a catalyst for fostering innovation in the water sector, thereby reducing risk for technology buyers by assuring the credibility and reliability of certified technologies. Additionally, the campaign seeks to seamlessly integrate ETV into the existing framework of verification standards in the water sector, underscoring its role as a trustworthy verification process. Finally, it explores the relationship between ETV and the water footprint, with the potential to certify technologies for their efficiency in managing water resources sustainably.

In summary, the campaign seeks to establish ETV as a valuable asset in the water sector by addressing the specific needs and concerns of the industry. It aims to build trust in ETV, link it with industry standards, and explore its potential impact on reducing the water footprint of technologies.

The forthcoming campaign within the water sector will be executed by Cetaqua - Water Technology Center, which aspires to establish itself as a reference ETV testing body for water technologies. This pursuit aligns with the delineated business model, as illustrated in Figure 1.

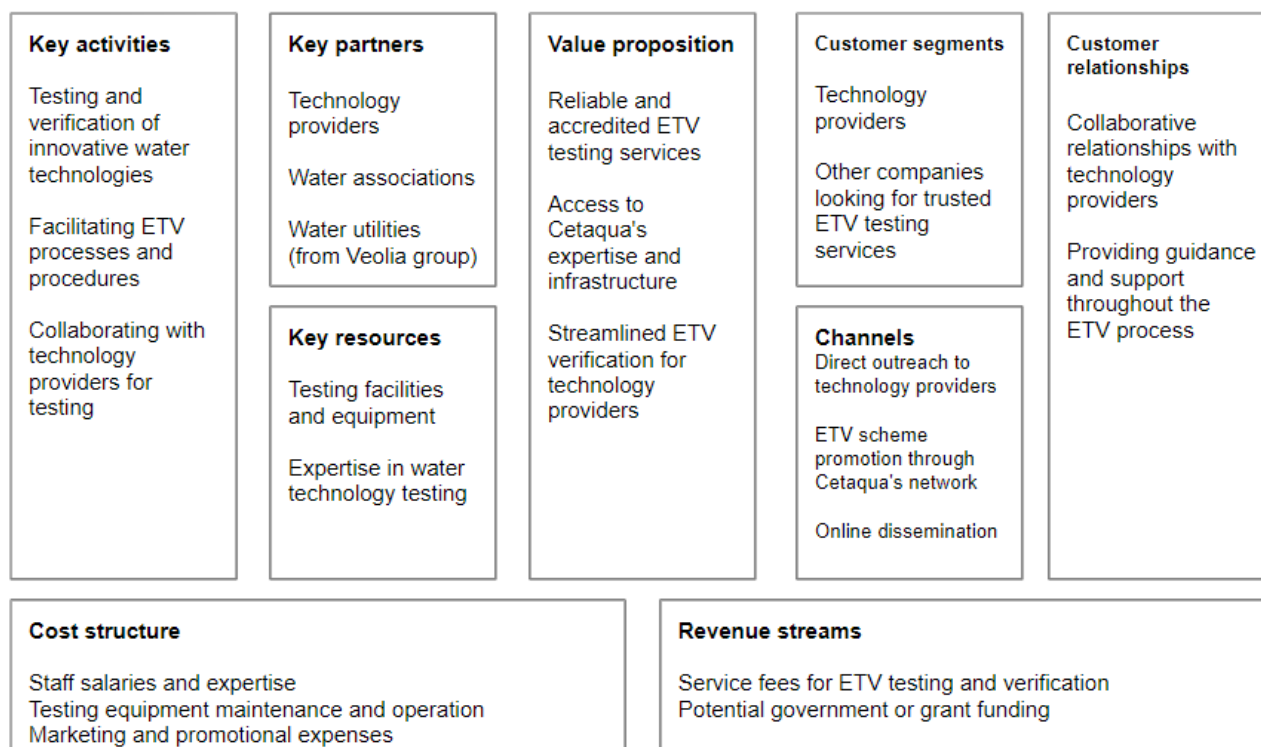


Figure 1. Cetaqua's business model canvas as ETV testing body.

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