

Roadmap for building ETV market acceptance and recognition: POLAND

Summary

From cost to value perception, market acceptance and recognition of ETV as a voluntary environmental scheme supporting ESG and the EU Green Taxonomy

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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 focussed on the topic of “sustainable water management” because of its importance for industry and society, and the challenges related to it in terms of: access to quality drinking water, water scarcity, material recuperation from wastewater, wastewater reuse. One has to take notice of the fact that the EU taxonomy and ESRS relate to sustainability of business activities notwithstanding the kind of technologies applied to achieve the indicator values and goals. In several discussions during online debates experts showed their concern about the current stipulations not necessarily being in favour of new technology development, as companies probably would tend to proof compliance with minimum requirements applying well-proofed technologies in line with BAT/BREF, branch norms and standards.

The ETV use case serves also as a basis for developing a business case for a verification body in the context of new challenges for over 50 000 companies in Europe and their supply chains: the Corporate Sustainability Reporting Directive (CSRD), European Sustainability Reporting Standards (ESRS) and EU taxonomy for sustainable activities. Both: the ETV use case and the business case presented in this roadmap will be promoted in Poland based on the potential of the verification body at the Institute for Ecology of Industrial Areas under the LIFEproETV project. The Institute for Ecology of Industrial Areas (IETU) is currently the only accredited active ETV body in Poland (and one of 5 in the EU). The scope of accreditation covers among others the technology area: water treatment and monitoring, which justifies the focus of this roadmap and of the ETV use case on the aspect of sustainable water management in the context of CSRD, ESRS and the EU taxonomy.

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

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

detailed analysis of these documents is included in the full version of the Roadmap which is attached to this document.

1.3. ETV status in Poland

Poland together with Denmark, France, the Czech Republic, Finland, Belgium and the UK was one of the 7 countries who joined the EU ETV Pilot Programme in 2012. Implementation and operation of ETV in Poland has been supervised by the Ministry of Climate and Environment. Polish Centre for Accreditation established an accreditation programme. Initially i.e. for the EU ETV Pilot implementation, 4 Verification Bodies were established: at the Institute of Technology and Life Sciences (ITP) branch in Poznań, at the Institute of Environmental Protection – National Research Institute (IOS-PIB), at the Automotive Industry Institute and at the Institute for Ecology of Industrial Areas (IETU). The technology areas covered by the accreditation scopes of these verification bodies were based on the 3 technology areas of the EU ETV Pilot programme i.e. water treatment and monitoring, energy technologies and materials, waste, resources. Currently, only IETU ETV Body is active. In total 3 Polish technologies have been verified under ETV so far: Asket's Biomasser (first technology verified under EU ETV Programme), NOVAGO's Anabiorec Periodic Bioreactor and BIO-Com produced by Selma.

In 2017 a dedicated ETV funding scheme has been established by the National Fund of Environmental Protection. Polish companies who verified technologies could request a 50% payback of the verification costs upon issuing of an ETV Statement. The maximum co-financing level was about 20.000 EUR and included verification costs and testing costs. Due to very limited interest (only 1 company applied), the scheme was terminated in 2022.

At national level, the fact that EU ETV was announced as a programme supervised by the Ministry of Climate and Environment has been reflected in several strategic documents including:

- The National Environmental Policy 2030 Development Strategy in the Area of the Environment and Water Management (PEP2030)²
- Strategy for Responsible Development until 2020 with a perspective until 2030 (SOR) (2017)³
- Productivity Strategy 2030⁴
- Public Procurement Policy (2023)⁵

Concerning the funding scheme, ETV is an eligible cost under the greening companies component of the FENG Programme – a funding scheme operated mainly by Polish Agency for Enterprise Development (PARP), and the National Centre for Research and Development (NCBR). dedicated to support the transformation of Polish economy towards Industry 4.0 and green technologies.

IETU has been an active partner in supporting the Ministry in ETV promotion activities associating the EU ETV Pilot implementation. Despite numerous promotion efforts and mentioning ETV on the web site of the Ministry as a programme supporting eco-innovation, the ETV awareness about the scheme is low. It refers in particular to the ways of recognition of the ETV Statements by the market.

² <https://www.gov.pl/web/srodowisko/polityka-ekologiczna-panstwa-polityka-ekologiczna-panstwa-2030>

³ <https://www.gov.pl/web/fundusze-regiony/informacje-o-strategii-na-rzecz-odpowiedzialnego-rozwoju>

⁴ <https://www.gov.pl/web/rozwoj-technologia/strategia-produktywnosci-2031>

⁵ <https://www.gov.pl/web/rozwoj-technologia/rada-ministrow-przyjela-polityke-zakupowa-panstwa>

2. THE CHALLENGE FOR THE ETV USE CASE IN POLAND

The challenge for the ETV use case to be addressed in Poland is to position the ETV scheme in the national sustainability financing and reporting ecosystem, taking into account the impact of the:

- Corporate Sustainability Reporting Directive (CSRD)⁶,
- European Sustainability Reporting Standards (ESRS)⁷, and
- the EU Taxonomy for sustainable activities⁸

on the investment policies of companies, financing policies of public and private fund providers (banks, operators of public funding schemes) and new environmental technology adoption processes in companies in line with their sustainability transition plans.

Corporate Sustainability Reporting Directive (CSRD) which entered into force in January 2023 modernises and strengthens the rules concerning the social and environmental information that companies have to report. A broader set of large companies, as well as listed SMEs, will now be required to report on sustainability. The new rules will ensure that investors and other stakeholders have access to the information they need to assess the impact of companies on people and the environment and for investors to assess financial risks and opportunities arising from climate change and other sustainability issues.

European Sustainability Reporting Standards (ESRS) adopted in July 2023 by all companies subject to the Corporate Sustainability Reporting Directive (CSRD). They are aimed to provide information for investors to understand the sustainability impact of the companies in which they invest.

The EU Taxonomy for sustainable activities is an important market transparency tool. It helps direct investments to the economic activities most needed for the transition, in line with the European Green Deal objectives. The taxonomy is a classification system that defines criteria for economic activities to recognise them as environmentally sustainable.

3. 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:

⁶ Directive (EU) 2022/2464 of the European Parliament and of the Council of 14 December 2022 amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as regards corporate sustainability reporting

⁷ https://finance.ec.europa.eu/news/commission-adopts-european-sustainability-reporting-standards-2023-07-31_en

⁸ https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en

- 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 – Ensure acknowledgement of ETV statements in investment projects' due diligence processes by way of engaging ETV bodies in the CSRD, ESRS, EU taxonomy (green transition) national eco-system and developing strategic partnerships with stakeholders in the financial and legal sector, while safeguarding market neutrality;

G2 – Increase awareness among water-related technology users (public and private sector) on how to consider ETV statements as a means to assess technology applications in line with green transition strategies and the EU taxonomy;

G3 – Increase awareness among water-related technology providers (companies, research and development institutes) about the added value of the ETV statements for new water technologies when promoting their performance as supporting to demonstrate compliance with the requirements for sustainable activities provided in the EU taxonomy;

G4 – Ensure the client-friendliness of the ETV scheme by way of providing support to the ETV process steps, including the preparation for ETV application and establishment of a network of competent test bodies to generate technology performance test data for the needs of ETV, so that the overall procedure can be provided in a consistent and an acceptable timeframe for all parties involved.

4. PROBLEM DEFINITION

The following specific problems/barriers have been defined for the ETV use case in the context of the EU taxonomy relevant for Poland

- **Regulatory problem/barrier:** lack of acknowledgement of ETV statements in investment projects' due diligence processes and in green procurement procedures;
- **Cultural problem/barrier:** lack of awareness among water-related technology users about CSRD and ESRS requirements, the role of EU taxonomy in green transition and investment projects;
- **Technological problem/barrier:** limited market uptake of cutting-edge water-related technologies that perform beyond BAT/BREF, norms and standards;

- **Market problem/barrier:** inconsistencies between the current ETV service delivery process and the potential role of third-party water-related technology validation in diminishing the investment risk in green transition processes.

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)
- Key stakeholders

Table 1. Regulatory problem for Poland

REGULATORY	LACK OF ACKNOWLEDGEMENT OF ETV STATEMENTS IN INVESTMENT PROJECTS' DUE DILIGENCE PROCESSES AND IN GREEN PROCUREMENT PROCEDURES
Cause	<p>Lack of awareness about the ETV scheme among financial institutions and law firms as a result of which ESG and EU taxonomy compliance assessment procedures for investment projects do not consider ETV statements (so-called hard technology verification).</p> <p>Limited application of green public procurement as it is not obligatory in most of the European membership countries. Often specialised knowledge and skills are missing among public sector personnel responsible for providing public procurement. There is only a limited number of verified technologies. Public sector organisations face significant legal framework uncertainty when trying to maintain technology neutrality in green public procurement. There is also a lack of awareness among public sector organisations about the use of third-party statements as a means to demonstrate compliance with technical specifications to support the participation of innovative companies in green public tenders.</p>
Current situation	<p>Financial institutions and law firms involved in ESG/EU taxonomy compliance assessment of investment projects do not always understand the difference between the European ETV programme and the ETV scheme based on the ISO standard. As such the due diligence process often include soft technology validation in terms of it meeting ESG/EU taxonomy criteria. Discussions with representatives of financial institutions have shown that it will be probably difficult to obligatory include ETV statements at the due diligence stage through changing regulatory procedures in the financial sector. However, they are open to consider the acknowledgement of ETV statements as an added value to shorten the environmental due diligence activities.</p> <p>Public procurement amounts to around 14% of European Union GDP. Theoretically it could represent an important tool to foster green transition. The European Commission started promoting public green procurement in 2008. Between 2008 and 2022 voluntary green procurement criteria for specific product groups have been developed (for example: EU Green Public Procurement criteria for waste water infrastructure) and some mandatory criteria and targets have been included in sectoral legislation. Specifically, for what concerns green procurement criteria for waste water infrastructure, an analysis in 2021 showed that only a few European member states were planning to implement or considering the introduction of specific green procurement criteria. There was no legal framework for standardised testing methodologies for waste water treatment technologies in green public procurement at that time. Verification procedures were mainly based on tenderer self-declarations without the requirement for third-party verification. Currently the voluntary EU Green Public Procurement criteria for waste water</p>

infrastructure are among the outdated criteria on the Commission's website.⁹ On the other hand, the technical screening criteria in the EU taxonomy include references to specific water supply and wastewater treatment systems. As such these requirements could trigger green public procurement in the years to come. In the framework of the LIFEproETV project a brochure was prepared to promote and provide guidance to public procurers: contracting authorities and contracting entities on the use of Environmental Technology Verification scheme as an ISO 14034 standardised process for verifying the performance of new environmental technologies in a credible, independent way in Green Public Procurement and Public Procurement of Innovation. This document shall be applied by the ETV body in the action plan.

The Polish public procurement law foresees a specific framework for green procurement, including the conditions to include characteristics and functionalities of materials, products or services in technical descriptions confirmed, among others, by labels. In this context a label should be understood as any document, including a certificate or attestation, which confirms that a building, product, service, process or procedure meets the requirements necessary to obtain the label. According to Art. 104 of the public procurement law, in the case of contracts with specific environmental, social or other characteristics, the contracting authority may, in order to confirm the compliance of the offered works, supplies or services with the required characteristics, in the description of the tender subject, the description of tender evaluation criteria or in the requirements related to the performance of the contract, request for a specific label, if the following conditions are cumulatively met :

- the requirements of the label relate only to criteria that are related to the subject of the tender and are appropriate to define the characteristics of the works, supplies or services that are the subject of the tender;
- the label requirements are based on objectively verifiable and non-discriminatory criteria;
- label requirements are developed and adopted through an open and transparent procedure in which all interested parties can participate, including entities belonging to public administrations, consumers, social partners, producers, distributors and non-governmental organisations;
- labels and label requirements are available to all interested parties;
- the requirements of the label are determined by a third party over which the economic entity applying for the label cannot exercise decisive influence.

Although these stipulations create the regulatory framework for applying ETV in green procurement additionally strengthened by the fact that ETV is recognised in Poland's new State Procurement Policy issued 2022, none of the public sector organisations providing green procurement considered ETV. One of the reasons could be the fact that public sector organisations have technical specifications for tenders elaborated by specialised engineering companies, that avoid risk and choose for proven indicators and functionalities.

OBJECTIVE

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| OBJ1 | Reach acknowledgement of ETV statements by financial institutions and law firms in investment projects due diligence processes. |
| OBJ2 | Reach understanding among civil servants on how to apply ETV statement requirements in green public tenders in line with the law on public procurement. |

SOLUTIONS

Engaging the ETV body in a cooperation with the Polish Bank Association to promote ETV statements as a means to provide information relevant to CSRD, ESRS and EU taxonomy compliance assessment of investment projects in due diligence processes at financial institutions.

⁹ https://green-business.ec.europa.eu/green-public-procurement/gpp-criteria-and-requirements_en

Engaging the ETV body in bilateral cooperation with financial institutions and law firms to analyse internal procedures, verify the possibility to include ETV statements in due diligence processes and to organise joint information campaigns.

Engaging the ETV body in a cooperation with the Polish Procurement Office to jointly provide trainings for public sector civil servants involved in public procurement processes.

Engaging the ETV body in a cooperation with associations in the water supply and wastewater treatment sector to jointly provide trainings for personnel involved in public procurement processes for water-related technology projects.

Opportunities ETV can provide independent assessment of technology solutions considered in public and private investment projects based upon already established legal and procedural frameworks in the financial and the public sector.

KEY STAKEHOLDERS

Who and Why Financial institutions and law firms involved in investment projects' due diligence and CSRD, ESRS/EU taxonomy compliance assessments of these investment projects. ETV statements deliver objective third-party information about functionalities and characteristics of technological solutions, including, when required, with reference to indicators, parameters and values included in the EU taxonomy.

Who and Why Public sector organisations in the water supply and wastewater treatment sector that have to comply with CSRD, ESRS and the EU taxonomy. Although public procurement procedures have to guarantee technology neutrality, requirements for objective third-party verification of technological solutions considered in bids in public procurement procedures could lead to the promotion of cutting-edge technologies that exceed minimum branch requirements and meet future challenges in a better way than proofed technologies meeting current standards.

Table 2. Cultural problem for Poland

CULTURAL

LACK OF AWARENESS AMONG WATER-RELATED TECHNOLOGY USERS ABOUT CSRD AND ESRS REQUIREMENTS, THE ROLE OF THE EU TAXONOMY IN GREEN TRANSITION AND INVESTMENT PROJECTS

Cause The CSRD, ESRS and EU taxonomy are fairly young and not well known among organisations in the water supply and wastewater treatment sector. Although most of them prepare non-financial reports each year, there is little awareness about the EU taxonomy impact on their investment activities. In order to convince target groups about the added value of ETV in green transition processes at the background of CSRD, ESRS and EU taxonomy, these target groups first must be informed about the overall European framework and forthcoming obligations.

Current situation Since 1990 the water supply and wastewater treatment sector in Poland went through several modernisation processes. Today this sector is characterised by proven technologies guaranteeing water quality and efficient wastewater treatment. However, climate change and water scarcity urge for new solutions. The Polish Waterworks Chamber of Commerce, with over 500 members, regularly organises workshops, training sessions and conferences, during which the latest technological solutions are being presented. On regional level branch associations involve water supply and wastewater treatment companies in best practices exchange and competencies development

OBJECTIVE

OBJ1 Include ETV in the awareness raising campaigns and training sessions concerning CSRD, ESRS and EU taxonomy organised by branch organisations in the water supply and wastewater treatment sector.

OBJ2 Include ETV in awareness raising campaigns concerning CSRD, ESRS and EU taxonomy during conferences and branch meetings directed to water-related technology providers and users.

SOLUTIONS

The ETV body shall have to enter into cooperation with experts CSRD and EU taxonomy to prepare joint training sessions in order to show the clear role between the new requirements and the role of ETV statements in investment processes when new technologies are being considered. In cases where an integrator or a company developed its own tailor-made solution based on a set of technologies combined together, it could occur that an independent assessment will be necessary to confirm the proclaimed functionalities and indicators in ESG reports. Also, should an organisation on the basis of its own-developed solutions want to provide licenses to other organisations, it shall have to demonstrate that the installation fulfils the expected requirements. In other words, the ETV body shall have to strengthen awareness about the added value of ETV statements in the green transition processes.

Opportunities ETV as an active player in green transition awareness raising and competence building processes directed to potential clients in cooperation with branch organisations and experts.

KEY STAKEHOLDERS

Who and Why Branch organisations in the water supply and wastewater treatment sector, business support organisations, experts and event/media organisations responsible for environmental technology related events (training, conferences, fairs) to plan and provide joint awareness raising and training activities.

Who and Why Water-related technology providers and users to inform and train them about the requirements related to CSRD, ESRS, EU taxonomy and the added value of ETV in technology verification for green transition.

Table 3. Technological problem for Poland

TECHNOLOGICAL

LIMITED MARKET UPTAKE OF CUTTING-EDGE WATER-RELATED TECHNOLOGIES PERFORMING BEYOND BAT/BREF, NORMS AND STANDARDS

Cause Water-related technologies are often applied in critical infrastructures that have to meet high safety and quality standards. As such technology users prefer mature solutions compliant with BAT/BREF requirements or concrete branch norms and standards, confirmed by a track record of previous applications. Additionally in public procurement processes the low-price criterion provides to price competitive widely applied technologies meeting technology neutral technical criteria being preferred above new technologies with higher research and development cost load. To meet the new challenges in water scarcity and climate change, as well as to support green transition in industrial processes, new technologies should be allowed in the playing field. It should be mentioned that the current CSRD and EU taxonomy framework creates favourable conditions for such new technology promotion – a framework that was not in place when the EU ETV programme was implemented – and could mean a new chance for the ETV system in Europe.

Current situation	As mentioned above, due to the fact that water-related technologies are often applied in critical infrastructures that have to meet high safety and quality standards, there is little space for testing and demonstrating new technologies. On the other hand, the promotion of water-related technologies is covered under the circular economy priority in the list of national smart specialisation priorities, including: processing and production, wastewater treatment and material recovery. The domains mentioned in the smart specialisation list create opportunities for new technology development in R&D programmes. Research and development institutes as well as universities are providing projects on water-related technology development and report new solutions. Also, start-ups supported by investment funds developed water-related technologies in the past decade. However, the market of water-related technologies is mainly dominated by international large companies. Also test data and performance of innovations resulting from R&D projects is based on in-house testing which may not be sufficiently credible, relevant and adequate to meet the requirements of the users and encourage them to experiment and choose a new, demo-tested technology instead of an established proven solution. Bank Gospodarstwa Krajowego (BGK) has initiated the “water-hydrogen-carbon” platform as a way to promote cooperation on new technologies between the scientific and business communities. The 3W Interdisciplinary Innovations Centre brings together researchers from different organisations to analyse challenges and define new opportunities for technology development.
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OBJECTIVE

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| OBJ1 | Include ETV in the “water-hydrogen-carbon” platform and promote the ETV statements for new technology as a natural step in at the technology demonstration stage, the before the technology commercialisation stage. |
| OBJ2 | Establish cooperation between ETV body and high-risk investment funds financing start-ups dealing with environmental technologies. |

SOLUTIONS

BGK provides dedicated activities to promote water-related technological solutions and cooperation between research teams and companies. Research teams will be engaged in soft technology validation concerning technologies that are to be promoted on the 3W platform. The ETV body will agree upon joint actions with the 3W platform and show the added value of hard technology validation and the role of ETV statements in positioning and promoting new technologies.

The ETV body shall initiate cooperation with high-risk capital funds supporting innovative water-related technology projects and show them the added value of ETV in the commercialisation process.


The ETV body shall initiate and strengthen cooperation with national public bodies managing public support instruments for environmental investment projects, such as: the National Fund for Environmental Protection and Water Management, the National Centre for Research and Development, the Polish Agency for Enterprise Development. Together with these organisations the ETV body shall examine possibilities to promote third-party environmental technology verification in technology development projects.

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| Opportunities | Spur water-related technology development beyond current BAT/BREF, norms and standards in start-up ecosystems and CSRD, ESRS, EU taxonomy eco-systems in order to support green transition and increase competitiveness of the Polish economy on a wider scale. |
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KEY STAKEHOLDERS

Who and Why	Bank Gospodarstwa Krajowego (BGK) providing the 3W platform and participants on the platform, including: research and development teams, technology companies, technology users in order to make use of the technology networking activities in the ecosystem for CSRD, ESRS and EU taxonomy in Poland.
Who and Why	High-risk investment funds that invest in environmental technology start-ups and start-ups dealing with water-related technologies in their portfolio so to support them in technology commercialisation processes and diminish the risk of market failure of new technologies when placing on the market.
Who and Why	National public bodies managing public support instruments for environmental investment projects, such as: the National Fund for Environmental Protection and Water Management, the National Centre for Research and Development, the Polish Agency for Enterprise Development, to promote third-party environmental technology verification in technology development projects as a means to strengthen cutting-edge environmental technology commercialisation in Poland at the background of strategic challenges related to water scarcity in Poland.

Table 4. Market problem for Poland

	INCONSISTENCIES BETWEEN THE CURRENT ETV SERVICE DELIVERY PROCESS AND THE POTENTIAL ROLE OF THIRD-PARTY WATER-RELATED TECHNOLOGY VALIDATION IN DIMINISHING THE INVESTMENT RISK IN GREEN TRANSITION PROCESSES
Cause	<p>The amount of ETV services provided in the period 2015–2022 was fairly small in comparison to the potential of the involved ETV bodies in Europe. While providing activities in the framework of granted projects, there was little room for flexible verification of the ETV service process itself and for lean improvements. As a result, ETV is recognised as a highly cost- and time-consuming process. Without compromising the ETV procedures, there are still some time-consuming activities that could be optimised to increase the duration and cost tolerance of technology providers. In order to become more competitive and reliable in the context of CSRD, ESRS and EU taxonomy green transition processes, ETV bodies have to seek measures to further standardise the service, e.g. by providing assistance at the application stage, building networks and skills of qualified test bodies, developing commonly agreed test protocols for specific types of technologies with key stakeholders reflecting key technology performance aspects and their test methods</p>
Current situation	<p>The ETV system is based on the ISO standard 14034 Environmental management – Environmental technology verification (ETV). Inspection bodies operate as accredited bodies according to ISO 17020. Test results are obtained by the client from competent test bodies (preferably laboratories accredited under ISO 17025: General requirements for the competence of testing and calibration laboratories) and delivered to the inspection body. The current customer journey includes:</p> <p>In order to present a technology for verification, the client contacts a verification body that requests an initial set of information about the technology and client's expectations concerning the performance claim to be verified. Collection of information at the contact phase may be supported by a Quick Scan (an additional step, not part of the ISO 14034 process) requested by the verification body to provide structured information on the candidate technology and get a</p>

recognition of client's expectations. Based on the analysis of the Quick Scan, the client receives feedback and instructions whether to proceed with ETV application or not. If the decision is positive, the client develops an application file based on a structured application form requiring information about the technology and its performance that must be sufficient for the verification body to understand the technology and assess if its technical design is likely to deliver performance as declared by the client. The application specifies also the initial performance claim proposed for verification. The application file is evaluated by the verification body for compliance to formal and technical requirements and the procedure ends up stating the eligibility of a technology to enter the pre-verification stage. The client agrees with the verification body on the performance claim and the specific parameters to be verified and based on this, the verification body elaborates a verification plan in consultation with the client. The plan defines the requirements for test data to back-up the claim. To verify the performance, the verification body analyses the available performance test data provided by the client. If the data set meets the requirements, the performance can be verified, if not the client is requested to perform additional testing. The end result is a conclusion of the verification body about the actual achieved performance presented in details in a verification report and summarised in a statement of verification. Upon successful completion of all the procedures the statement of verification is published by the verification body at a minimum. This customer journey can last about 12 months and even more (depending on the testing needs). Compared to technology development processes and the commercialisation route of new technologies on a wider scale, this should be an acceptable timeframe. However, in terms of CSRD, ESRS and EU taxonomy compliance of technologies considered by organisations in their green transition, this could be a hurdle. Therefore, the process could be optimised by way of delivering clients with guidance and tools accelerating some processes (e.g. a self-assessment tool to help the client define the readiness for ETV application in terms of technology TRL level, scope of information about the technology, test data requirements as well as formal requirements), development of testing protocols and a network of test bodies that know the ETV requirements and are able to deliver appropriate test data.

OBJECTIVE

- OBJ1** Improve the client-ETV relationship and communication by way of introducing the self-assessment tool, appropriate information exchange (e.g. through the ETV Knowledge Hub) and optimise the work in the process.
- OBJ2** Build a network of competent test bodies that can be considered by the client in case of the need to deliver additional test data.

SOLUTIONS

The ETV body should take up a proactive role in the eco-system, however maintaining its neutral position. It shall provide supportive tools for clients, train own personnel in communication techniques with clients and elaborate a network of accredited laboratories. As a result of improvements, the total customer journey should not take more than 10 months – apart from cases requiring extended testing due to the need of seasonal data collection.

- Opportunities** ETV body to become an active reliable market-oriented neutral player in green transition processes, positioning third-party technology verification as a means to diminish investment related risks in green transition processes.

KEY STAKEHOLDERS

Who and Why	Technology providers and technology users that developed own installations on the basis of acquired technologies in order to receive objective technology verification and verified data proving compliance of the applied technological solution with specific requirements (ESRS) for ESG reports.
Who and Why	Test bodies, accredited laboratories under ISO 17025 (general requirements for the competence of testing and calibration laboratories) to develop a reference list of competent entities that can support clients in test data generation for ETV needs.

5. KEY STAKEHOLDERS MAP

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

- Regulatory:
 - Financial institutions and law firms involved in investment projects' due diligence and CSRD, ESRS and EU taxonomy compliance assessments of these investment projects;
 - Urząd Zamówień Publicznych (Public Procurement Office) responsible for, among others, preparing training programmes, organising and inspiring training events in the field of public procurement,
 - Public sector organisations in the water supply and wastewater treatment sector that have to comply with CSRD, ESRS and EU taxonomy with the aim to elaborate with them new values for specific indicators and parameters for investment projects and to pave the way for green procurement.
- Cultural:
 - Branch organisations in the water supply and wastewater treatment sector, business support organisations, experts and event/media organisations responsible for environmental technology related events (training, conferences, fairs) to plan and provide joint awareness raising and training activities;
 - Water-related technology providers and users to inform and train them about the requirements related to CSRD, ESRS, EU taxonomy and the added value of ETV in technology verification for green transition.
- Technological:
 - Bank Gospodarstwa Krajowego (BGK) providing the 3W platform and participants on the platform, including: research and development teams, technology companies, technology users in order to make use of the technology networking activities in the ecosystem for CSRD, ESRS and EU taxonomy in Poland;
 - High-risk investment funds that invest in environmental technology start-ups and start-ups dealing with water-related technologies in their portfolio so to support them in technology commercialisation processes and diminish the risk of non-acceptance of new technologies on the market;
 - National public bodies managing public support instruments for environmental investment projects, such as: the National Fund for Environmental Protection and Water Management, the National Centre for Research and Development, the Polish Agency for Enterprise Development, to promote third-party environmental technology verification in technology development projects as a means to strengthen cutting-edge environmental technology

commercialisation in Poland at the background of strategic challenges related to water scarcity in Poland.

- Market:
 - Technology providers and technology users that developed own installations on the basis of acquired technologies;
 - Test bodies, accredited laboratories under ISO 17025 (general requirements for the competence of testing and calibration laboratories) that can support clients in test data generation.

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. Some of the stakeholders have already been contacted by the Institute for Ecology of Industrial Areas and confirmed their willingness to cooperate in joint actions to raise awareness among the wider group of technology providers and users in the water supply and wastewater treatment sector.

6. ACTION PLAN

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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 5. Actions and their impact on the achievement of the goals

ACTIONS	GOALS
REGULATORY	
R.A1: Identify leading financial institutions and law firms that are already active in the field of sustainability reporting and EU taxonomy compliance assessments of investment projects and are ready to consider ETV statements in investment projects' due diligence processes.	
R.A2: Provide bilateral meetings with representatives of financial institutions and law firms to explain the ETV scheme and to present the added value of the ETV service in the verification process of CSRD, ESRS and EU taxonomy compliance of their clients' investment projects, in particular in the field of water-related technologies.	
R.A3: Enter into contact with the Polish Bank Association and verify the possibility to jointly promote third-party technology verification in CSRD, ESRS and EU taxonomy compliance assessments of investment projects.	G1 G2 G3 G4
R.A4: Prepare training materials and test a training programme for financial institutions and law firms about the ETV scheme.	
R.A5: Enter into cooperation with associations in the water supply and wastewater treatment sector and introduce ETV issues in their training programmes on CSRD and EU Taxonomy for water supply and wastewater treatment companies.	
R.A6: Provide information and training sessions for water supply and wastewater treatment companies and engineering companies on the use of ETV in the context of green public procurement.	

CULTURAL

C.A1: Verify the time schedule for planned events directed to organisations in the water supply and wastewater treatment sector and connect with organisation responsible for programming. Propose to include the issues of CSRD, ESRS and EU taxonomy in the programme and agree on a presentation about ETV by the ETV body.

C.A2: Engage into cooperation with experts on CSRD, ESRS and EU taxonomy that can deliver complementary information and prepare a joint training offer for target groups. Inform target groups directly or indirectly through branch associations about the training offer.

C.A3: Prepare presentation content for small presentations and training content for training sessions about the ETV scheme in the context of CSRD, ESRS and EU taxonomy. Agree with branch organisations about the possibility to provide training sessions about the ETV scheme and the possibility to set new performance standards by technology users.

C.A4: Verify the readiness among organisations in the water supply and wastewater treatment sector to define new (more stringent) values for indicators and parameters for a selected group of water-related challenges (for instance starting from the minimum requirements defined in ESRS and EU taxonomy or starting from BAT/BREF and then setting new values that could trigger cutting-edge technology development and implementation in the framework of green procurement). In case of a positive contribution from the side of these organisations and their readiness to provide green procurement based on a commonly agreed approach (including the requirement for third-party verification of technological solutions proposed in the bids), promote the new approach and solution requirements (values for specific indicators and parameters) among technology providers.

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G3
G4

TECHNOLOGICAL

T.A1: Define the terms of cooperation with the representatives of Bank Gospodarstwa Krajowego (BGK) on the 3W platform and prepare a time schedule of joint promotional activities and training sessions about the role of ETV in water-related technology commercialisation.

T.A2: Provide joint promotional activities and training sessions for the stakeholders on the 3W platform.

T.A3: Identify high-risk capital funds supporting innovative water-related technology projects and negotiate cooperation terms.

T.A4: Provide information and training sessions for green start-ups on the ETV system.

T.A5: Identify representatives of national public bodies managing public support instruments for environmental investment projects, who are responsible for instrument planning, monitoring and optimisation. Organise a meeting with these representatives to discuss current and potentially new stipulations that could be foreseen in programming documents to promote third-party environmental technology verification in public support instruments as a means to spur cutting-edge environmental technology development and commercialisation in Poland.

T.A6: Engage representatives of national public bodies managing public support instruments for environmental investment projects in one specific case study of an instrument that could include third-party environmental technology verification in technology development project (workshops) and develop a scenario that is feasible and deliver added value for all parties.

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MARKET

M.A1: Develop and promote the self-assessment tool for applicants and discuss opportunities for further improvement of the ETV service

M.A2: Identify test bodies and accredited laboratories under ISO 17025 active in the field of water-related technologies and start bilateral contacts with these laboratories or the organisations they are active within in order to discuss the terms of cooperation. Provide training materials concerning testing requirements for ETV.

M.A3: Prepare a list of test bodies and accredited laboratories with whom the ETV body may sign a memorandum of understanding and create a reference list of qualified providers. Present the list of

G1
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laboratories on the ETV body web site, promote them through ETV Network and Knowledge Hub and communicate to potential partners about the availability of the list of test bodies.

M.A4: Prepare and disseminate marketing materials informing about the ETV service with clear information about the cooperation and information exchange procedure and requirements for test data.

7. CONCLUSION FOR THE POLISH BUSINESS CASE AND ROADMAP

The entering into force of the Corporate Sustainability Reporting Directive (CSRD), European Sustainability Reporting Standards (ESRS) and EU taxonomy for sustainable activities brings new administrative and financial challenges for companies and the financial sector. But it also creates new opportunities for technology development in Europe. Ongoing discussions show the need for more clarity in the proposed reporting procedures and disclosure requirements in terms of business activities meeting legal and environmental indicators. For now, delegated acts refer to BAT, BREF and branch-related directives, norms and standards as the starting point for confirming environmental sustainability compliance without defining technology-related indicators or recommendations. Experts and stakeholders draw attention to the fact that this approach might lead to a technology status quo in Europe, rather than to spur new technology development. Notwithstanding the current situation and the legal framework, there are severe challenges in the economy and society that should be tackled sooner than later and for which new environmental technologies should be considered. Among these challenges one can count water scarcity and the need for a better water management in the aspect of the the circular economy.

The Institute for Ecology of Industrial Areas has been playing an active role in the ETV eco-system in Europe for over 18 years. Its widespread network of contacts in the field of environmental technologies, especially water-related technologies, shall form the basis for strengthening the Polish CSRD, ESRS, EU taxonomy eco-system, within which it can become a reliable partner for financial institutions, insurance companies and legal firms in supporting investment project compliance assessments and the green transition of Polish companies. Based upon the minimal requirements and indicators in ESRS and EU taxonomy, together with company groups and branch associations, IETU shall discuss opportunities for defining new indicator values to promote technology development and commercialisation. As such it shall deliver professional service to technology providers wanting to validate their environmental technology functionalities and characteristics in respect to CSRD, ESRS, EU taxonomy and additional branch set indicators.

Contact

 **LIFEproETV**

 **lifeproetv-project**

 **lifeproetv.eu**

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