



Open Market Consultation

Document for the

Pre-Commercial Procurement for the

development of integrated urban water

management systems towards

“PCP for green and digital transition”

November-December 2025

SPIN4EIC Assistance to Public Buyers
The National Centre for Research and Development (NCBR), Poland

Timeline of the OMC activities:

Request for Information (RFI) questionnaire: <https://ec.europa.eu/eusurvey/runner/SPIN4EIC-NCBR-OMC-survey>

Webinar registration form: <https://ec.europa.eu/eusurvey/runner/SPIN4EIC-NCBR-OMC-Epitching-registration-form>

Date of publication of the Pre-Information Notice (PIN) on TED: November 6, 2025

Date of publication of OMC documents and questionnaire: November 7, 2025

Date of OMC webinar in English: November 25, 2025

Date of OMC webinar in Polish: November 26, 2025

Questionnaire submission deadline: December 10, 2025

Date of e-pitching session: December 17, 2025

Date of publication of OMC report: ~~December 29, 2025~~ January 9, 2026

Date of closure for the OMC: ~~December 30, 2025~~ January 12, 2026

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Economic operators and other stakeholders are informed that any information concerning the implementation and execution of both the procurement procedure and the execution of any contract/framework agreement resulting from the procurement procedure, as well as public summaries of the results of the PCP project, including information on the main results achieved and lessons learned by purchasers during the PCP, may be shared by NCBR with (in) the context of the market, after consultation with the supplier concerned, and may therefore be analysed, (re)used, and published by NCBR.

The disclosure of certain information could be omitted in cases where it would impede the enforcement of laws, be contrary to the public interest, prejudice against the legitimate commercial interests of suppliers involved in the PCP, or harm fair competition between participating suppliers or others in the market.

A pre-information notice, or PIN, has been published in TED to announce the Open Market Consultation on possible future procurement activity. Publication number of the notice: [734672-2025](#)

The original language of this open market consultation is English.

Abbreviations and acronyms

CET	Central European Time
COTS	Commercial Off-The-Shelf
EC	European Commission
EMS	Energy Management System
EU	European Union
GDPR	General Data Protection Regulation
GPA	Government Procurement Agreement
IPRs	Intellectual Property Rights
NCBR	National Center for Research and Development
OMC	Open Market Consultation
PCP	Pre-Commercial Procurement
PPI	Public Procurement of Innovative solutions
PIN	Prior Information Notice
RES	Renewable Energy Systems
RFI	Request For Information
R&D	Research and Development
SMEs	Small and Medium Enterprises
TED	Tenders Electronic Daily

1. Purpose of the Open Market Consultation

1.1. Scope and main objectives

This document describes the objectives and rules applicable to the Open Market Consultation (OMC) of NCBR project for the future **Pre-Commercial Procurement (PCP) for the development of integrated urban water management systems that address both water scarcity and excess water risks through smart retention, reuse, and real-time monitoring solutions, with the aim to enhance climate resilience, public service continuity, and infrastructure safety in Polish municipalities towards for the “PCP for green and digital transition”**.

The OMC begins on the date of the publication of the Prior Information Notice (PIN) in the Tenders Electronic Daily (TED) and ends on the date indicated in this document, unless NCBR decides to terminate it prematurely. Through this OMC, NCBR aims to challenge the market to provide feedback on the PCP for green and digital transition challenge of NCBR and cities in Poland.

In this context, the purpose of the OMC is to inform technology providers and other relevant stakeholders about the needs of NCBR and to gather their input about the NCBR challenge. Another objective of the OMC is to understand the technology providers' capabilities to satisfy the NCBR's needs and to obtain their input on the viability of the procurement plans and conditions as described in this document and annexes.

In sum, the objectives of this OMC are to:

1. Validate the findings of the preliminary state-of-the-art analysis and the viability of the set of technical and financial provisions.
2. Raise awareness of the industry and relevant stakeholders regarding the potential future PCP.
3. Collect insights from the industry and relevant stakeholders to fine-tune the tender specifications.

This OMC is performed under the law of NCBR, which is Polish law.

Polish Public Procurement Law provides for the possibility to conduct preliminary market consultations as part of the preparation of the public procurement (art. 84 of PPL). NCBR is not legally bound in any way by the outcome of the OMC. Starting an OMC does not mean that NCBR will start a tendering or purchasing procedure. If this OMC is followed by a tendering procedure and/or purchasing procedure, NCBR reserves the right to adjust and/or supplement the solution described in this document on every element. No rights can be derived from statements and/or communications during this OMC in any future tendering procedure and/or purchasing procedure.

The OMC is not part of any pre-qualification or selection process. No advantage or disadvantage will be given to any technology provider/group of technology providers to the detriment of others during the OMC and the subsequent competitive procedure for the award of contracts.

Based on the information obtained, the NCBR may engage in discussions with the parties that provided it. In such cases, the NCBR will take all necessary measures to ensure fair competition. All information provided during the OMC and other background information will be published online in English and Polish <https://www.gov.pl/web/ncbr/konsultacje-rynkowe-dialog-techniczny>

Where appropriate, parts of the information received from market parties can be shared with the EC.

1.2. Who can participate?

All interested parties are invited to take part in the OMC. SMEs and startups are encouraged to participate. The OMC is also open to end-users and cities interested in integrated urban water management systems that address both water scarcity and excess water risks through smart retention, reuse, and real-time monitoring solutions, with the aim of enhancing climate resilience, public service continuity, and infrastructure safety in Polish municipalities.

Participation in the OMC is voluntary and non-binding and is at the own expense and risk of market operators. A market operator cannot charge any costs to NCBR for participation in the OMC or for (re-)use of its information in the context of a future procurement procedure.

Participation in this OMC is not a condition for submitting a tender in the subsequent procurement, does not lead to any rights or privileges for the participants, and is not part of any pre-qualification or selection process. The input provided in this OMC will not be used to evaluate future proposals.

1.3. Activities & timetable

The OMC will take place in the form of:

- One webinar in English
- One webinar in Polish
- One e-pitching session in English.
- A Request for Information (RFI) – a questionnaire using the EU Survey tool.
- Other activities as deemed necessary within the scope of the project.

The timetable of activities and required actions of the OMC is as follows:

Request for Information (RFI) questionnaire: <https://ec.europa.eu/eusurvey/runner/SPIN4EIC-NCBR-OMC-survey>

Webinar registration form: <https://ec.europa.eu/eusurvey/runner/SPIN4EIC-NCBR-OMC-Epitching-registration-form>

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NCBR is entitled to adjust the planned activities and the timetable above, and to include new activities at any time according to the needs and responses of the market. Furthermore, it may decide to terminate the OMC for its own reasons at any time. In that case, the **NCBR will publish any modifications on the portal site:** <https://www.gov.pl/web/ncbr/konsultacje-rynkowe-dialog-techniczny>

The events and webinars celebrated within the framework of the OMC will be recorded. In that case, by attending the events, you will consent to be recorded. By using your video and microphone during the webinars, you will consent to be recorded. If you do not want your voice and image to be recorded during the webinars, you may ask your questions using the chat. NCBR shall use those records for the project only.

In addition, please be aware that photos may be taken during the meetings. The NCBR shall use those photos for the project only.

1.4. Registration

Parties interested in participating in the OMC activities are requested to **register here:**

<https://ec.europa.eu/eusurvey/runner/SPIN4EIC-NCBR-OMC-Epitching-registration-form>

1.5. Procedure

The OMC starts on the date of its publication in TED and ends on the date set in the timetable, unless terminated earlier.

Interested parties are requested to register through the link provided above to participate in the events and receive additional information about the project. The questionnaire should be filled out before the deadline indicated in the timetable above.

The NCBR will support interested parties throughout the whole OMC during the events and by answering questions through a Q&A document, which will be published on the project's website.

Additional written contributions in the form of a Request For Information (RFI) questionnaire or other questionnaires (via the EU Survey platform), aiming to collect market information on innovative and commercial solutions, may be requested.

The responses to the questionnaires should not contain any confidential information. As the questionnaire is intended to explore the market "as is", there are no wrong answers. The answers provided will be used as input for the procurement strategy and contract conditions.

After processing and analysing the answers, the NCBR will disseminate the results to the widest possible audience. Nevertheless, all answers provided by market parties will be anonymised and treated as confidential. The NCBR will therefore not provide information about specific answers from market operators. Only the general findings and a summary of the answers will be provided. The results of this OMC will be published on the **portal site**: <https://www.gov.pl/web/ncbr/konsultacje-rynkowe-dialog-techniczny>

In case the information provided in this document and annexes needs further clarification, market operators may ask questions during the events, or **via the contact email address**: izp@ncbr.gov.pl.

Market operators who wish to provide additional confidential information during the OMC can send an email to the email address indicated above. The information must be clearly marked as confidential. Confidential information will not be included in the OMC report.

1.6. Annexes

The following annexes are part of this document:

- Annex I – Request for Information (RFI) questionnaire
- Annex II – Challenge brief and Use cases

The annexes form an integral and inseparable part of this OMC document. In the event of any conflict between the provisions of this document and the annexes, the provisions of the OMC document shall prevail.

2. NCBR - integrated urban water management systems

2.1. Context and objectives

NCBR aims to procure the development of **integrated urban water management systems that address both water scarcity and excess water risks through smart retention, reuse, and real-time monitoring solutions**, with the aim of enhancing climate resilience, public service continuity, and infrastructure safety in Polish municipalities.

In this context, the **integrated urban water management systems** (to be developed beyond the state of the art and applied to the reality of Polish cities) modular, adaptable solutions capable of dynamically responding to both drought and flood scenarios, enabling water reuse for firefighting, irrigation, or public infrastructure, while supporting real-time data collection, early warning alerts, and operational dashboards for municipal management.

2.2. PCP challenge and main requirements

NCBR intends to implement a Pre-Commercial Procurement (PCP) process to acquire R&D services aimed at developing an innovative solution that addresses the urban water management challenges faced by Polish cities.

The envisaged future PCP – i.e. a joint procurement of R&D services – is intended to be launched to reinforce **public demand-driven innovation on the PCP for green and digital transition domain**. PCP has the potential to be an effective demand-side innovation action and a useful tool to close the gap between supply and demand for innovative solutions. Solutions are expected to achieve TRL 7-8.

The potential future PCP should deliver successful, innovative and fully tested product(s) and/or service(s) that meet the common need of the public buyers to procure research, develop innovative marketable solutions, speed up the time-to-market and provide best value for money.

The innovative solution is expected to cover the main functionalities described in Annex II.

2.3. The Pre-Commercial Procurement approach

This OMC concerns a potential future Pre-Commercial Procurement (PCP) for the development of **integrated urban water management systems**. PCP is an approach that allows public procurers to buy R&D from several competing technology providers in parallel, to compare alternative solution approaches, and to identify the best value-for-money solutions that the market can deliver to address their needs. In PCP, there is risk-benefit sharing under market conditions between the public procurer and the technology providers, and a clear separation between the PCP and the deployment of commercial volumes of end-products.

Along with the R&D services, the PCP allows to purchase some products providing that the value thereof is **less than 50 % of the total value of the contract**.

The PCP tender will start with the publication of the contract notice along with the request for tenders, the framework agreement, and the phase contracts. After evaluating the offers submitted by the technology providers according to the rules established in the tender documents, the contracts will be awarded, and a contract award notice will be published. The process will be monitored to ensure sound deployment, integration and validation of the PCP.

The PCP procedure is composed of three phases: solution design, prototype implementation, and validation and demonstration of the solutions.

Phase 1. Solution design: During this phase, the contractors will be asked to describe the solution providing the complete architecture and design thereof and verifying the technical, economic and organizational feasibility of their solution to address the PCP challenge.

Phase 2. Prototype implementation: This phase concerns the development of the first prototypes of the solutions, which will be tested. Contractors will develop a first prototype based on the design documents delivered in the previous phase and test their solutions in lab conditions. Prototypes will be tested and verified to provide a measure of the technical performance of each solution in a controlled environment. During and at the end of the phase 2, NCBR will request from the contractors a series of deliverables in order to evaluate their progress and the performed activities and obtained results.

Phase 3. Validation and demonstration of the solutions: It will validate the final solutions (at least two) in diverse conditions, using the detailed scenarios and processes developed in the verification and validation strategy. During phase 3, a feedback mechanism will be established between NCBR and the selected contractors in order for the latter to receive requests for improvements directly from the end users. The Public Buyers will request from the contractors an Integration Report. Finally, a Field Acceptance Report related to the accomplishment that the two final solutions which have been deployed and that the validation tests have been successfully performed in a real operational environment will be requested.

After each phase, intermediate evaluations will be carried out to progressively select the best of the competing solutions. The contractors with the best-value-for-money solutions will be offered a specific contract for the next phase.

The contractors will retain ownership of the IPRs that they generate during the PCP and will be able to use them to exploit the full market potential of the developed solutions.

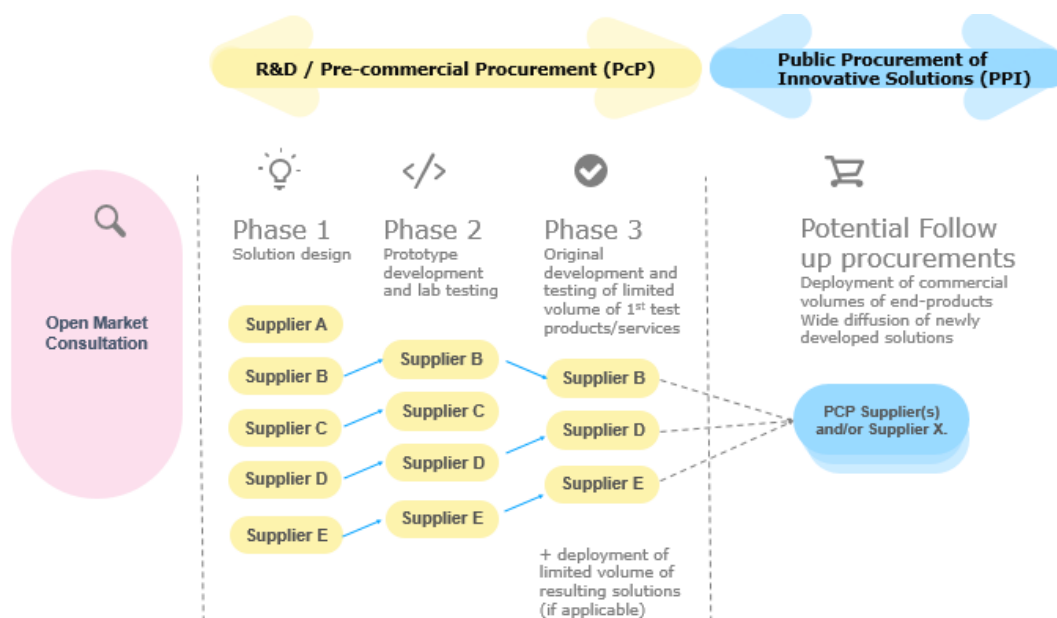


Figure 1. PCP phased process and a follow-up PPI

PCP is characterised by the following five **features**:

1. Competitive development in phases to identify the solutions offering the best value for money

PCP target situations that require radical innovation or R&D and for which there are typically no solutions on or close to the market yet. Different competing providers may have different ideas for solutions to the problem. As R&D is yet to take place, there is not yet any proof as to which of these potential alternative solutions would best meet customers' needs.

PCP, therefore, award R&D contracts to a number of competing contractors at the same time, in order to compare different approaches to solving the problem. It thus offers innovators an opportunity to show how well their solution compares with others. It also allows a first customer test reference to be obtained from the countries of the procurers that will test the solutions.

The R&D for this PCP is split into 3 phases (Phase 1: solution design, Phase 2: prototyping and lab testing, Phase 3: original development, installation, wider field testing and validation of a limited set of 'first' products or services).

Evaluations after each phase will progressively identify the solutions that offer the best value for money and meet the customers' needs. This phased approach allows successful contractors to improve their offers for the next phase, based on lessons learnt and feedback from procurers in the previous phase. Using the phased approach with gradually growing contract sizes per phase will also make it easier for smaller companies to participate in the PCP and enable SME to grow their business step-by-step with each phase.

Depending on the outcome of the PCP (whether it will result in innovative solutions that meet the tender requirements and offer best value for money), procurers may or may not decide to follow-up the PCP with a Public Procurement of Innovative solutions (PPI).

2. Public procurement of R&D services

PCP addresses mid- to long-term public procurement needs for which either no commercially stable solutions yet exist on the market, or existing solutions exhibit structural shortcomings which require further R&D to resolve. PCP is a way for procurers to trigger the market to develop new solutions that address these shortcomings. PCP focuses on specific identified needs and provides customer feedback to businesses from the early stages of R&D. This improves the likelihood of commercial exploitation of the newly developed solutions.

PCP is explained in the PCP communication COM/2007/799 and the associated staff working document SEC/2007/1668. The R&D services can cover R&D activities ranging from solution exploration and design, to prototyping, right through to the original development of a limited set of ‘first’ products or services in the form of a test series. Original development of a first product/service may include limited production/supply in order to incorporate the results of field-testing and demonstrate that the product/service is suitable for production/supply in quantity to acceptable quality standards. However, R&D does not include quantity production or supply to establish the commercial viability or to recover R&D costs.¹ It also excludes commercial development activities such as incremental adaptations or routine/periodic changes to existing products, services, production lines, processes or other operations in progress, even if such changes may constitute improvements.

3. Open, transparent, non-discriminatory approach — No large-scale deployments

Unless there are specific participation and/or control restrictions (*see section 3.1*), PCP procurements are normally open at least to all operators in EU Member States or HE associated countries, on equal terms, regardless of the size, geographical location or governance structure².

In all cases, there is, however, a place of performance requirement that a predefined minimum percentage of the contracted R&D services must be performed in EU Member States or HE associated countries (or a more restricted list of countries; *see section 3.1*).

All communication (before, during and after the procurement) will normally be carried out in English (and other languages, if mentioned in section 5).

¹ See also Article XV(1)(e) WTO GPA 1994 and the Article XIII(1)(f) of the revised WTO GPA 2014.

² Horizon Europe associated countries

Participation in the PCP is not a prerequisite for the provisioning of a solution on a commercial scale.

4. Sharing of IPR-related risks and benefits under market conditions

PCP procures R&D services at market price, thus providing contractors with a transparent, competitive and reliable source of financing for the early stages of their R&D.

Giving each contractor the ownership of the IPR attached to the results (foreground) they generate during the PCP means that they can widely commercially exploit the newly developed solutions. In return, the tendered price must contain a financial compensation for keeping the IPR ownership —compared to the case where the IPR would be transferred to the procurers (the tendered price must be the ‘non-exclusive development price’). Moreover, the procurers must receive license-free rights to use the R&D results for internal use, and licensing rights subject to certain conditions.

The contractors also retain ownership of their background rights (albeit subject to certain rights of use by the procurers, see section 2.7)³.

5. Exemption from EU Public Procurement Directives, World Trade Organisation (WTO) Government Procurement Agreement (GPA) and EU state aid rules

PCP procurements are exempted from the EU Public Procurement Directives because the procurers do not retain all the benefits of the R&D (the IPR ownership stays with the contractors).⁴

They are also exempted from the WTO GPA because this Agreement does not cover R&D services⁵ (the PCP being limited to such services and any subsequent procurement procedure relating to commercial-scale supply of such solutions not being part of the PCP).

PCP does not constitute state aid under the EU state aid rules⁶ if they are implemented as defined in the PCP communication⁷, namely by following an open, transparent, competitive procedure with risk- and benefit-sharing at market price. The division of all rights and obligations (including IPR) and the selection and award criteria for all phases must be published at the outset; the PCP must be limited to R&D services and

³ For more information, see PCP on the [Europa website](#)

⁴ See Article 16(f) of Directive [2004/18/EC](#) (Article 14 of Directive [2014/24/EU](#)), Article 24(e) of Directive [2004/17/EC](#) (Article 32 of Directive [2014/25/EU](#)) and Article 13(f)(j) of Directive [2009/81/EC](#).

⁵ See the EU’s Annex IV of Appendix I to the [WTO GPA](#).

⁶ See Point 33 of the [Commission Communication on a framework for state aid for research and development and innovation](#) (C(2014) 3282).

⁷ [Commission Communication: Pre-Commercial Procurement: driving innovation to ensure sustainable, high quality public services](#) (COM(2007) 799) and [PCP staff working document](#) (SEC(2007)1668).

clearly separated from any potential follow-up PPI; PCP contractors may not be given any preferential treatment in a subsequent procurement for provision of the final products or services on a commercial scale.

Contracts implementation

During the implementation of the PCP of NCBR, effective tools will be used in order to monitor the performance of the R&D suppliers and provide regular feedback during each phase. Each contractor will be assigned a main contact person (their supervisor) appointed by the procurers as the main point of contact.

More specifically the monitoring process will be divided in 3 set of activities:

- **Pre-monitoring:** A kick-off meeting per contractor will be scheduled at the beginning of each PCP phase and the selected contractors will be requested to present their implementation schedule for the PCP phase that they are entering in. During the same meeting, the supervisor will present the framework for the review. The objective is to establish a close and fruitful communication channel with the contractors, in order to ensure from the early beginning of the action that the project is implemented according to the needs of the buyers.
- **Monitoring:** Contract implementation will be monitored and reviewed against the expected outcomes for each phase. The intensity of monitoring and communication between NCBR and the contractors will increase from phase 1 to phase 3. For instance, regular meetings with the contractors by video call or face-to-face, on-site visits to the contractors' locations to check and discuss the status of the work and progress, or any other suitable way. Ad-hoc meetings and on-site inspections are also possible in the event that the R&D development has halted or slowed down.

The contractors are mandated to present monthly the current status of the work and describe the progress made. All the documentation generated by the contractors will be reviewed and the ideas and recommended areas to pursue will be highlighted in post-review activities.

- **Post-monitoring:** At the conclusion of the monitoring activities, the supervisor will provide written feedback for each contractor at each PCP phase. This feedback will generally consist of overall comments and remarks about the contractor's outcomes under review. Monitoring activities will be continued after the PCP is completed. Specifically, it will be checked whether the contractors are successfully commercializing the R&D results within the call-back period defined in the PCP framework agreement. If that is not the case, NCBR will ask the R&D suppliers to give licenses under FRAND terms to other third parties or to transfer back the ownership of results to NCBR.

2.4. NCBR

The National Centre for Research and Development (NCBR) is an executive agency within the meaning of the Act of 27 August 2009 on Public Finance, operating on the basis of the Act of 30 April 2010 on the

National Centre for Research and Development and the statute attached to the regulation of the Minister of Science and Higher Education of 9 September 2010 on the statute of the National Centre for Research and Development. The functioning of the National Centre for Research and Development also regulates a number of executive and legal acts related to the implementation of programs financed from European financial instruments.

NCBR's motto: The future is happening with us.

NCBR's mission: We create the world of Polish innovation. We are building modern present times and the future.

NCBR's vision: NCBR is a centre for supporting and developing innovative technological and social solutions, creating an ecosystem of knowledge of, and information about, innovation. It organises and implements undertakings contributing to the civilisation growth of the country.

NCBR's values

• Cooperation	• Trust	• Development
• Client-centred approach	• Engagement	

In this context, NCBR is supporting and leading public buyers in Poland towards innovation for the PCP for green and digital transition, for which it aims to develop **integrated urban water management systems** to tackle the needs of cities and explore what the market can offer.

More info: [NCBR - The National Centre for Research and Development - Gov.pl website](#)

2.5. Market analysis: preliminary results

The analysis of the global and European innovation landscape for integrated urban water management indicates a rapid expansion of digital, AI-based, and data-centric technologies supporting real-time monitoring, forecasting, and adaptive control. Despite this progress, existing solutions remain compartmentalised, focusing separately on flood mitigation, sensing, or data integration, without achieving a truly unified approach to managing the entire urban water cycle. Within Europe, innovation activity is growing yet still characterised by limited market deployment and fragmented collaboration across sectors. This underscores the potential for enhanced strategic alignment and investment in interoperable, scalable solutions. For Poland and the wider EU, this presents a timely opportunity to pioneer comprehensive, climate-resilient water management systems that connect technological advancement, standardisation, and innovation procurement within a cohesive urban resilience framework.

Annex I – Request for Information (RFI) questionnaire

PCP Challenge

- 1. Do you offer solutions for water retention and reuse (e.g. rainwater harvesting, greywater reuse)?**

Yes / No

- If yes, please specify types and scale of implementation:

- 2. Is your solution modular and scalable (i.e. adaptable to different municipality sizes and needs)?**

Yes / No

- If yes, please provide examples:

- 3. Does your solution include real-time monitoring of rainfall, groundwater, or flood risk?**

Yes / No

- If yes, please list sensors/data points covered:

- 4. Do you provide a digital dashboard for municipal operators (e.g. alerts, analytics, control panel)?**

Yes / No

- If yes, please describe the main features:

- 5. Can your system automatically activate emergency measures (e.g. backup pumps, flood gates)?**

Yes / No

- If yes, please specify the emergency functions:

- 6. Does your solution integrate with existing infrastructure and civil protection systems?**

Fully / Partially / Not yet

- If partially, please describe what's needed for full integration:

- 7. Can your solution support emergency water supply backup (e.g. for firefighting, schools, hospitals)?**

Yes / No

- If yes, how is this achieved?

8. Do you provide scenario planning or simulations (e.g. flood response, drought risk)?

Yes / No

- If yes, please give an example:

State-of-the-art-analysis

9. Do you think there is room for technological development beyond the state of the art?

Yes / No. Please explain.

10. What is the readiness level of your solution? (TRL level)

11. Do you rely on any patented technology or standards?

Yes / No. Please explain.

12. Are there existing patents or intellectual property barriers that could limit your solution's development or deployment?

Yes / No. Please explain.

Miscellaneous

13. Are you open to piloting your solution in collaboration with public authorities (e.g. municipalities)?

Yes / No

14. Would you be interested in participating in an innovation procurement or co-development process (e.g. PCP/PPI)?

Yes / No

15. What type of support do you provide post-deployment?

- Training
 - Maintenance
 - Monitoring & updates
 - Other: _____
-

16. What standards or protocols do you follow for interoperability and data sharing?

17. How do you address cybersecurity and data protection?

18. What is the typical timeline and budget for implementing your solution?

19. Have you worked with public sector clients on similar solutions? Please provide examples.

20. Would you like to cooperate with another company?

21. Would you be interested in matchmaking possibilities?

22. What recommendations or alternatives would you propose?

Annex II – Challenge brief and the use case

“Development of **integrated urban water management systems that address both water scarcity and excess water risks through smart retention, reuse, and real-time monitoring solutions**, with the aim to enhance climate resilience, public service continuity, and infrastructure safety in Polish municipalities.”

Based on the initial information, some foreseen functionalities and the use case are detailed in the following sections.

Functionalities:

- Real-time water level monitoring, forecasting and alerting
- Smart rainwater collection, retention, and reuse (e.g. for irrigation, cleaning, firefighting)
- Flash flood response mechanisms (e.g. temporary drainage, overflow redirection)
- Backup water solutions for emergency services (e.g. fire stations, hospitals)
- Digital dashboard for urban planning, coordination, and incident response

Keywords: water scarcity, flood risk, early warning, smart infrastructure, climate adaptation, real-time monitoring, integrated urban water management, IoT in water systems, sustainable water solutions, water reuse

Use case: Integrated Urban Water Resilience System.

Narrative: A municipal water authority or city infrastructure department uses the Integrated Urban Water Resilience System to manage water-related risks in real time. For example, during periods of heavy rainfall, the system collects data from a network of IoT-enabled sensors placed across the city to monitor rainfall intensity, soil moisture, groundwater levels, and stormwater flow. This real-time data is visualised through a central digital dashboard, enabling operators to assess risk levels immediately.

When rainfall exceeds thresholds, the system automatically triggers alerts and recommends or initiates actions such as activating overflow drainage systems, diverting excess water, or deploying temporary water retention infrastructure. Simultaneously, it monitors available water storage capacity and reuse options (e.g., for irrigation or firefighting), offering operational support during both flood events and drought periods.

In dry conditions, the system optimises the use of collected rainwater or greywater for cleaning, irrigation, or supplying emergency reserves. For critical infrastructure like hospitals or fire stations, the system ensures backup supply readiness by monitoring tank levels and pump functionality.

The dashboard enables planning and coordination across departments by visualising all critical water data, highlighting anomalies, and supporting data-driven decisions for urban climate resilience.

USE CASE NAME: Integrated Urban Water Resilience System	
(a) Subject matter - topic	Development and deployment of an integrated, modular, and digitally enabled water resilience system that addresses both water scarcity and excess water risks in Polish contracting authorities.
(b) ‘As is’ situation – current problem, way in which things are done at present	– Urban drought and groundwater decline, affecting firefighting, green spaces, and daily water services. – Flash floods and excess rainfall overwhelm outdated or insufficient infrastructure. – These issues are exacerbated by: – Lack of real-time data and early warning capacity. – Underdeveloped reuse systems (e.g., stormwater/rainwater not repurposed). – Limited emergency water backup, especially for critical services. – Gaps in coordination and technical capacity to plan and implement systemic upgrades.
(c) Desired result, expected improvement to be measured	– Responds dynamically to both water scarcity and water excess events. – Supports the continuity of public services (firefighting, healthcare, utilities, green spaces). – Can be adapted to the size, risk profile, and technical capacity of different municipalities. – Promotes cross-sector collaboration and innovation procurement in line with national climate and digitalisation strategies.
(d) Related stakeholders/end-users (e.g. public organisations, citizens, etc.)	Municipalities, fire brigades, water utilities, schools, healthcare facilities, environmental agencies, State Water Holding – Polish Waters (Państwowe Gospodarstwo Wodne Wody Polskie), Ministry of Infrastructure, National Fund for Environmental Protection and Water Management.
(e) Information needs (data sources)	Real-time rainfall and soil moisture data, groundwater levels, drainage system capacity, usage data for critical services, infrastructure maps, and emergency demand projections.
(f) Functional requirements	– Smart retention & reuse infrastructure: modular rainwater harvesting and storage, greywater reuse for firefighting/irrigation, bio-retention. – Real-time monitoring & early warning: IoT sensors (rainfall, soil moisture, groundwater, flood risk), central dashboard with alerts, integration with emergency systems.

	– Emergency water supply & backup solutions: on-site reserve units, automatic backup pumps and pressure systems, disruption-proof water delivery. – Interoperability & local adaptability: customisable to local topographies and regulatory needs; interfaces with existing infrastructure; designed for multi-site piloting and scaling.
(g) Buyer	Municipal contracting authorities and/or central bodies (State Water Holding – Polish Waters, Ministry of Infrastructure, National Fund for Environmental Protection and Water Management).

3. GDPR clause

Information Clause Regarding the Processing of Personal Data in the Context of Preliminary Market Consultations

In accordance with the information obligation under Articles 13(1) and (2) of Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation, GDPR), we inform you that:

1. The controller of the personal data of the Participant in the preliminary market consultations is the National Centre for Research and Development (hereinafter: “NCBR”).
2. You may contact the data controller in the following ways:
 - a) by mail: Narodowe Centrum Badań i Rozwoju, ul. Chmielna 69, 00-801 Warsaw, Poland
 - b) by phone: +48 22 390 74 01
 - c) by email: kancelaria@ncbr.gov.pl
 - d) via the ePUAP electronic inbox: /NCBiR/SkrytkaESP
3. The controller has appointed a Data Protection Officer (DPO), who can be contacted:
 - a) by email: iod@ncbr.gov.pl
 - b) by mail: Narodowe Centrum Badań i Rozwoju, ul. Chmielna 69, 00-801 Warsaw, Poland

You may contact the DPO in all matters related to the processing of personal data by NCBR and the exercise of your rights under the GDPR.

4. The personal data of the Participant will be processed for the purpose of conducting preliminary market consultations, based on Article 6(1)(c) of the GDPR, in connection with Article 84 of the Public Procurement Law of 11 September 2019 and the NCBR Procedure PW_3.7.2-1 for awarding public contracts.
5. Recipients of the personal data may include entities authorized to process the data under law or under agreements with the Controller, in particular entities supporting the Controller in fulfilling its rights and obligations and providing services, e.g., NCBR+ Sp. z o.o., ul. Chmielna 69, 00-801 Warsaw, and Corvers Procurement Services BV, Spurkstraat 57, 5275 JB, Den Dungen, the Netherlands (entity providing technical and legal support in the preparation of a PCP procurement).
6. The personal data of the Contractor will be processed for the duration of the preliminary market consultations. The data will then be stored for archival purposes for a period of 5 years, in accordance with the Uniform File Classification System of the National Centre for Research and Development.
7. The obligation to provide personal data directly concerning the Contractor is a statutory requirement under the provisions of the Public Procurement Law, related to participation in preliminary market consultations; failure to provide specific data may result in consequences as defined by the Public Procurement Law.
8. The Contractor has the following rights:

- a) the right to access their personal data;
 - b) the right to rectify or supplement their personal data;
 - c) the right to request the restriction of processing of personal data, subject to the exceptions referred to in Article 18(2) of the GDPR. The right to restrict processing does not apply to data storage for the purpose of exercising legal claims or protecting the rights of another natural or legal person, or for important reasons of public interest of the European Union or a Member State.
9. If the Contractor believes that the processing of their personal data violates data protection regulations, they have the right to lodge a complaint with the supervisory authority, which is the President of the Personal Data Protection Office (Prezes Urzędu Ochrony Danych Osobowych, 00-014 Warsaw, ul. Moniuszki 1a, tel. +48 22 531 03 00).

4. Additional provisions

Pursuant to Article 24(6) of the Act of 14 June 2024 on the Protection of Whistleblowers, we hereby inform you that the National Centre for Research and Development has adopted Internal Reporting Rules concerning breaches of law and the undertaking of follow-up actions. Accordingly, it is possible to report any alleged breach of law that you become aware of in connection with the activities of NCBR, including procurement processes, Open Market Consultations (OMC), or PCP, in the following forms:

- electronically to the email address [compliance@ncbr.gov.pl]
- by postal mail, addressed to the Centre with the note “for the attention of SZZ”
- by submitting a delivery directly to the Section for Compliance Management and Access to Public Information
- by making a statement for the record in the presence of an employee of the Section for Compliance Management and Access to Public Information.