Business Models Hub

Investors Tutorial for Seasonal Wastewater Solutions in Near-Coast Touristic Areas

June 2026

NURSECOAST-II – Model Nutrients Reduction Solutions in Near-Coast Touristic Areas

Deliverable D3.2 – GoA 3.2 Barriers & Incentives for Business – Interreg Baltic Sea Region 2021–2027

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Executive Summary

The D3.2 Business Models Hub translates the NURSECOAST-II work on business barriers and incentives into a practical investment and replication guide. It supports municipalities, water utilities, tourism-oriented site owners, investors and technology providers in selecting, financing and implementing small or decentralised wastewater treatment solutions adapted to seasonal tourist regions. The central premise is simple: the same seasonal pressure that creates nutrient pollution risks can also create demand for new technologies, new service models and new public-private cooperation.

The hub combines four evidence streams:

- A3.2.1 identifies investor priorities and turns them into transferable guidelines;
- A3.2.2 maps technology suppliers and small WWTP solutions suitable for plants up to 2,000 PE;
- A3.2.3 compiles business incentives, grants, loans and public-aid schemes across partner countries
- A3.2.4 documents business-linking and matchmaking between end-users, investors and technology providers.

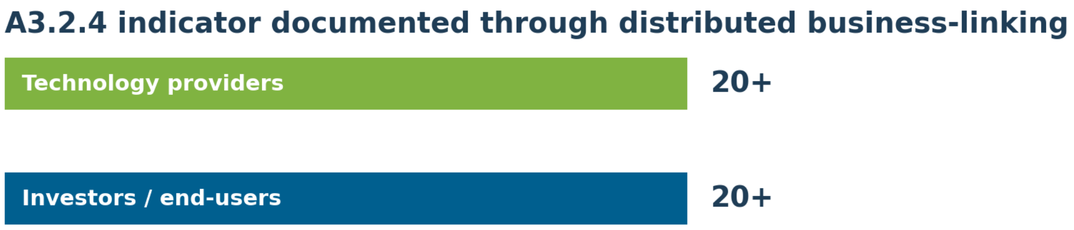

Figure 1. The business-linking strand documents the 20+20 engagement logic feeding into D3.2.

Three messages are particularly important for publication: (1) small wastewater plants need solutions that can tolerate strong load variation, not only solutions that perform well at stable design loads. (2) financing must be considered at the same time as technology selection because the target users are often small municipalities, public utilities or tourism facilities with limited investment capacity. (3) replication requires trust-building: the project experience showed that distributed national and bilateral engagement can be more effective than a single centralised matchmaking event.

- Digital monitoring and nanobubble aeration are strong first-move options because they are modular, transferable and relevant to existing plants.
- Nature-based systems, water reuse and nutrient recovery can create circular-economy value where land, regulation and public acceptance are favourable.
- Supplier selection should consider capacity range, seasonal resilience, references, certification, service availability and lifecycle costs.
- Funding options differ by country, but many programmes support planning, pilot demonstration, energy efficiency, wastewater infrastructure and rural water systems.
- The Hub should be used as a starting point for local feasibility studies, permit checks, procurement preparation and replication projects.

In practical terms, D3.2 is not a catalogue alone. It is a route map for moving from an identified seasonal wastewater problem to a financially and technically realistic project. The following chapters explain the route in detail.

1. How to Use the Business Models Hub

The Business Models Hub can be used in several ways. A municipality can use it to structure a first discussion with engineers and suppliers. A utility can use it to compare technology families before procurement. A tourism operator can use it to understand whether a decentralised or reuse-oriented solution may fit its site. Investors can use it to assess risks, financing routes and possible business models. Technology providers can use it to understand the needs of public buyers in seasonal tourist areas.

User group	Typical use of the Hub	Most relevant sections
Municipality or public utility	Define problem, select options, prepare procurement.	Chapters 4-6, 9 and 14
Tourism operator or site owner	Understand decentralised systems, reuse, local operational duties.	Chapters 6-8 and Annex A
Investor or financing body	Screen risks, cash-flow logic public-aid routes.	Chapters 5, 10 and 11
Technology provider	Identify end-user needs, partnership logic.	Chapters 8, 12 and 13
Regional authority or policy actor	Support replication, policy dialogue, harmonised guidance.	Chapters 3, 14 and 15

A reader does not need to follow the document in sequence. However, the recommended workflow starts with a needs assessment, moves to technology screening, then to finance and risk assessment, and finally to procurement and replication. The next chapter explains why this sequence is necessary in seasonal tourist destinations.

2. Project Context and Investment Problem

Near-coast tourist destinations in the Baltic Sea Region often depend on small wastewater systems. These plants, networks and decentralised solutions may serve a modest permanent population in winter but a much larger population in summer. The result is a seasonal load profile with short but intense peaks in flow, organic matter, nitrogen and phosphorus. When the plant is not prepared for these peaks, treatment performance can become unstable and the risk of nutrient discharge increases.

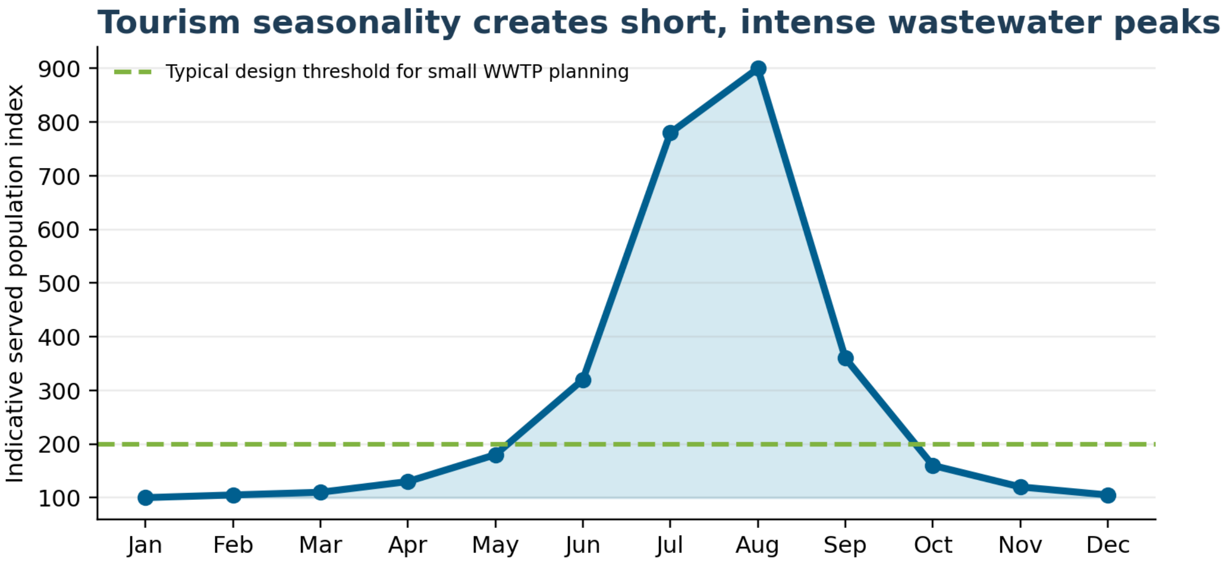

Figure 2. Indicative seasonal load profile showing the investment challenge for small WWTP planning.

Seasonality affects investments in several ways. It can make conventional over-sizing expensive and inefficient because large parts of the plant remain underused in the low season. It can make operation difficult because treatment processes need time to stabilise when loads change. It can also make financing less attractive because revenue or municipal budgets may not match the timing of environmental pressure. For these reasons, D3.2 focuses on flexible solutions: modular treatment, process optimisation, nature-based buffering, reuse, digital monitoring and circular use of sludge or nutrients.

The investment problem is therefore not only technical. Decision makers must align environmental performance, capital expenditure, operating expenditure, permitting, public acceptance and the capacity of local staff. A good project is one that can be operated reliably after the grant period ends, not only one that can be built.

3. Evidence Base and Methodology

D3.2 consolidates four activity reports, each of them prepared by one project partner, and interprets them as a single publication. The method was to convert each report into one functional layer of the Hub: investor guidance, supplier screening, funding routes and business-linking evidence. The structure was then expanded with explanatory text, comparison tables, figures and checklists so that the Hub can be used outside the project partnership.

Source	How it is used in D3.2
A3.2.1 Investor priorities and transferable guidelines	Defines the decision context for investors and municipalities, including environmental performance, reliability, lifecycle cost, scalability, climate resilience and institutional capacity.
A3.2.2 Technology suppliers / companies database	Provides the market basis for supplier identification and technology comparison for plants below 2,000 PE.
A3.2.3 Business incentives and public-aid programmes	Maps grants, loans, compensation schemes, PPP routes and EU-level funding opportunities relevant to wastewater investments.
A3.2.4 Transnational Business Link Event	Documents the distributed matchmaking process, participating organisations, engagement indicator and proposed pilot consortia.
NURSECOAST-II application form	Provides the work-package logic, deliverable definition and activity responsibilities for GoA 3.2.

The publication uses a practical rather than academic methodology. It does not rank one technology or one country above another. Instead, it provides structured questions and comparison criteria that local stakeholders can adapt to their own site, legal framework and budget.

Part I - Investor Guidelines

Part I converts project evidence into guidance for investment decisions. It explains what investors and public decision makers should examine before choosing a wastewater solution. The goal is to avoid technology-led procurement where a site purchases equipment before understanding its seasonal load, institutional capacity and financing route.

4. Investor Priorities and Decision Criteria

Investor priorities identified under GoA 3.2 are broader than simple construction cost. A seasonal wastewater investment must be environmentally effective, operationally reliable during peak loads, affordable across its lifecycle, compliant with permits and acceptable to local residents, tourists and operators. The criteria below can be used as a first screening tool before engaging suppliers.

Priority	What it means	Practical check
Environmental performance	Expected reduction of nitrogen, phosphorus, organic matter and local discharge risk.	Define target effluent quality and monitoring plan.
Seasonal reliability	Ability to tolerate rapid changes in flow and pollutant load.	Use seasonal load scenarios, not only annual averages.
Lifecycle cost	CAPEX, OPEX, maintenance, energy, sludge, staff and replacement cost.	Compare total cost of ownership over 10-20 years.
Scalability and modularity	Ability to add or remove capacity as tourism demand changes.	Prefer modular designs where uncertainty is high.
Climate resilience	Sensitivity to flooding, drought, heat, power interruptions and stormwater inflow.	Check siting, elevation, emergency storage and remote monitoring.
Operational capacity	Skills, staffing, spare parts, supplier service and laboratory access.	Match technology complexity to local resources.
Replication potential	Ability to transfer the solution to other BSR sites.	Document performance evidence and procurement lessons.

A robust investor guideline should require evidence for each criterion. For example, a low capital-cost solution may become expensive if it requires frequent operator visits, specialised spare parts or high energy use. Conversely, a higher initial cost may be justified if it reduces nutrient discharge, energy consumption and sludge handling over the lifecycle.

Local authorities should also consider how the project will be explained to the public. In tourist destinations, wastewater investments are linked to bathing-water quality, environmental reputation and local economic resilience. Clear communication can therefore reduce resistance and improve willingness to cooperate with construction, temporary disruptions or new user fees.

5. Investment Pathway and Risk Controls

The recommended investment pathway has five steps. The sequence is important because each step reduces uncertainty before the next commitment is made. Skipping directly to procurement can lock a municipality into a solution that does not match the site, while delaying finance discussions can produce technically attractive but unaffordable concepts.

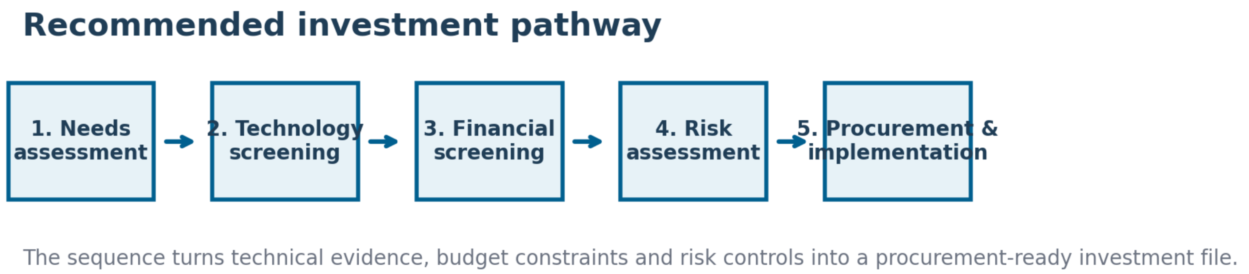

Figure 3. Recommended pathway from problem definition to implementation.

1. **Needs assessment**: establish the seasonal load profile, current treatment performance, environmental sensitivity and legal obligations.
2. **Technology screening**: compare at least two or three technology families against site constraints, land availability and operator capacity.
3. **Financial screening**: identify grants, loans, municipal budget contributions, service contracts or PPP options before finalising the design.
4. **Risk assessment**: document permitting, technical, lifecycle-cost, supplier, public-acceptance and climate risks.
5. **Procurement and implementation**: specify performance requirements, monitoring obligations, training, after-sales support and responsibilities.

The pathway should produce a concise investment file. That file should include the site description, baseline data, preferred technology family, preliminary budget, funding route, risk register, procurement approach and expected environmental benefits. This makes the project easier to review by funders and less vulnerable to delay during contracting.

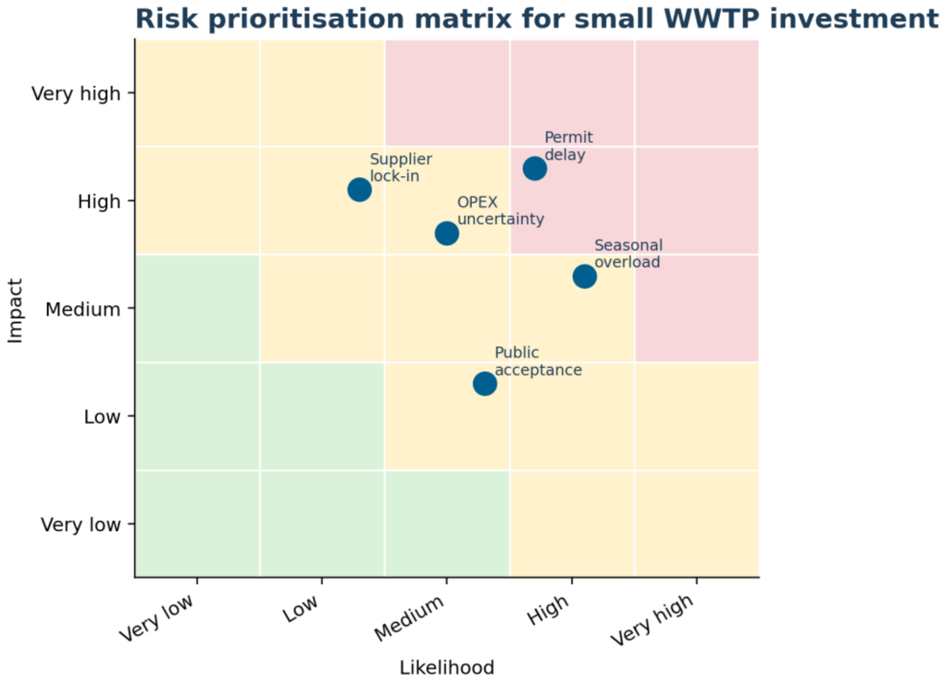

Figure 4. Example risk matrix for prioritising mitigation measures.

Risk control does not mean avoiding all risk. Pilot projects and innovation naturally involve uncertainty. The practical aim is to identify which risks are manageable locally and which require external support. For example, permit delay may be reduced by early contact with regulators, while supplier lock-in can be reduced by performance-based specifications and transparent market dialogue.

6. Business Models for Seasonal Wastewater Solutions

The business model determines who pays, who owns the asset, who operates it and who carries performance risk. In small tourist destinations, the best model may differ from standard municipal infrastructure procurement. Some sites need a publicly owned plant with grant support; others may benefit from a service contract, shared utility model, PPP or a circular product revenue stream.

Business model	Description	Best fit
Public investment with grant support	Municipality or public utility owns and operates the asset; grant or subsidised loan reduces CAPEX.	Core wastewater infrastructure, network upgrades and public-service obligations.

Water-as-a-Service	Provider installs and/or operates the solution; user pays for treated volume, availability or nutrient reduction.	Modular systems, temporary capacity boosts, sites with limited technical staff.
Seasonal capacity contract	Mobile or modular equipment provides peak-season support without permanent over-sizing.	Tourism peaks, festivals, marinas, campsites and seasonal settlements.
PPP or concession	Private partner finances, builds or operates the asset under a long-term agreement.	Larger upgrades, sludge valorisation and regional shared services.
Circular revenue model	Recovered nutrients, compost, biochar, biogas or reuse water contribute value.	Sites with suitable regulation, logistics and scale for resource recovery.
Cluster procurement	Several municipalities or sites procure similar solutions together.	Regional replication, framework contracts and shared maintenance.

The choice of model should follow the risk allocation. A municipality should not transfer a risk to a supplier if the supplier cannot control it, such as unexpected regulatory changes or public opposition. Similarly, a supplier should not be expected to guarantee nutrient removal where influent data is missing or where stormwater inflow overwhelms the system. Clear baseline data and monitoring responsibilities are therefore essential in every model.

For many NURSECOAST-II target sites, a blended approach is most realistic: grant support for construction, municipal ownership for strategic control, supplier service for specialist operation, and digital monitoring to document performance. Where circular-economy outputs are feasible, they should be treated as additional value rather than the sole basis of the business case.

Part II - Technology Suppliers Database

Part II summarises the supplier and technology layer of the Hub. The database prepared under A3.2.2 identifies companies active in small wastewater treatment systems and related technologies for plants up to 2,000 PE. The purpose is not to recommend one supplier, but to help municipalities understand the market and ask better procurement questions.

7. Technology Landscape

Small and seasonal wastewater sites require technologies that can be scaled, operated with limited staff and adapted to fluctuating load. NURSECOAST-II work highlights a portfolio approach: a site may combine core biological treatment with digital monitoring, aeration optimisation, polishing wetlands, reuse or sludge management. The best solution is often a combination rather than a single product.

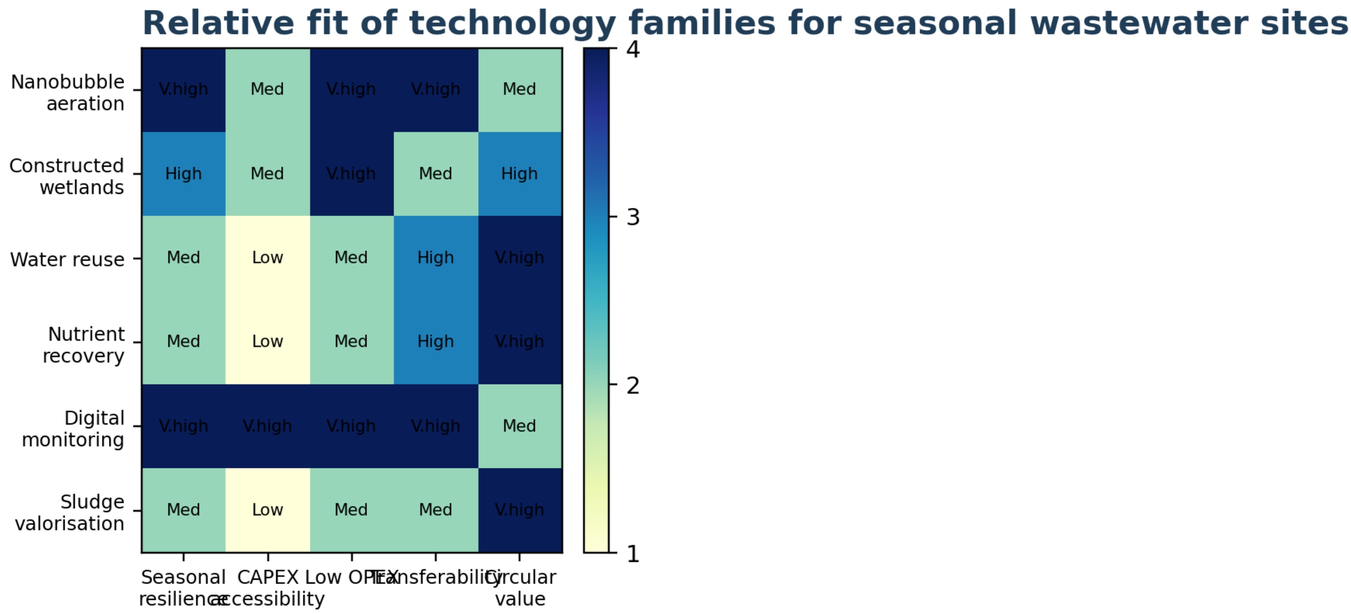

Figure 5. Relative fit of technology families for seasonal wastewater sites.

The figure shows why digital monitoring and aeration optimisation are often early priorities: they improve control of existing systems and can be transferred to many sites. Constructed wetlands and nature-based solutions provide buffering and public co-benefits where land is available. Water reuse, nutrient recovery and sludge valorisation can create circular value but usually require stronger regulatory, logistical and financial preparation.

Technology family	Main function	Relevance for seasonal sites
SBR / activated sludge	Compact biological treatment in cycles; widely used in small plants.	Good for municipal and decentralised plants where operation can be controlled.
MBR / membrane systems	High effluent quality through membrane separation.	Useful where reuse or strict discharge standards justify higher cost and maintenance.
MBBR / biofilm systems	Biofilm carriers support stable biological treatment.	Useful for variable loads and compact retrofits.
RBC / trickling filters	Biofilm treatment with relatively simple operation.	Suitable for small systems with stable maintenance routines.
Constructed wetlands	Nature-based polishing, buffering and nutrient removal.	Strong fit for sensitive landscapes where land and public acceptance are available.
Nanobubble aeration	High-efficiency oxygen transfer and potential energy savings.	Relevant for capacity boosting and aeration optimisation in seasonal peaks.

Digital monitoring	Sensors, alarms, remote supervision, predictive control and reporting.	Highly transferable for small utilities managing multiple sites.
Sludge and nutrient recovery	Valorisation of sludge, phosphorus or energy.	Best for larger or clustered systems where logistics support recovery.

Municipalities should avoid selecting technologies solely from supplier brochures. Each option should be checked against influent variability, required effluent quality, staff capacity, spare-parts availability, monitoring needs and references in comparable climates or tourist settings.

8. Supplier Database and Market Observations

The A3.2.2 supplier database was developed from trade-fair contacts, targeted internet research and industry directories. It shows that the Baltic Sea Region and wider European market offers a broad mix of SBR, biofilm, MBR, MBBR, constructed wetland, containerised and hybrid systems. Many suppliers provide modular systems that can be installed quickly and scaled to small communities.

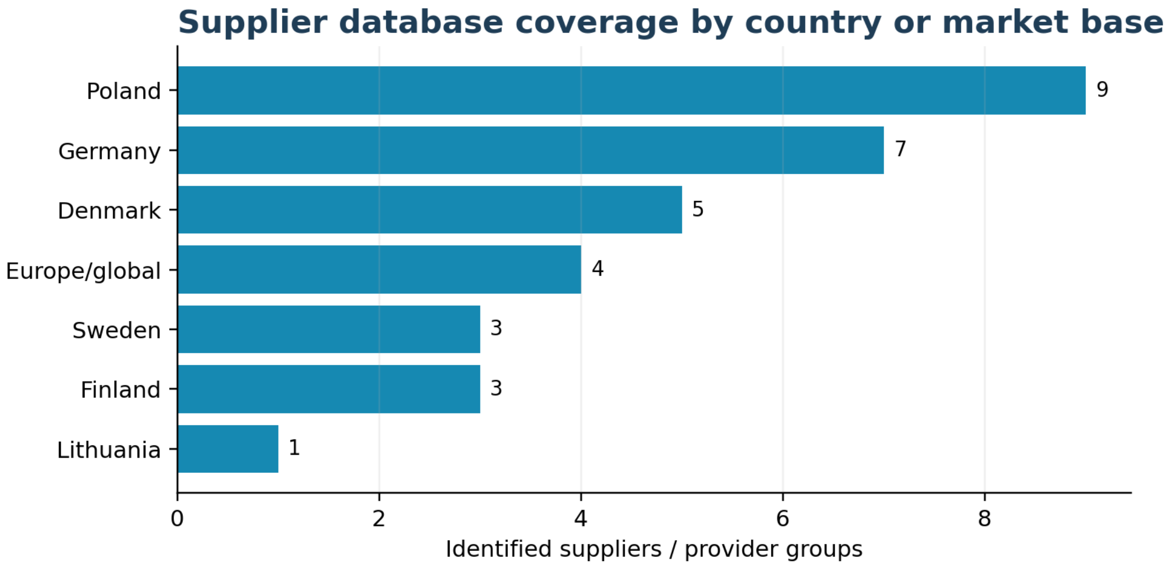

Figure 6. Supplier database coverage by country or market base.

The distribution should be read as a market-screening snapshot rather than a complete procurement list. Some companies operate across borders and some technologies are supplied through local distributors. For procurement, municipalities should always verify capacity range, certificates, references, service coverage and compliance with national standards.

Example supplier	Country / base	Typical solution	Indicative capacity
Uponor Infra	Finland / Poland	SBR, biofilm, modular decentralised units	5-2,000 PE
GRAF Group	Germany	Prefabricated biological WWTPs and SBR systems	4-2,000 PE
Wavin	Denmark / Netherlands	Modular wastewater infrastructure and biofilm systems	5-500 PE
EkoWodrol	Poland	Containerised activated-sludge systems	50-2,000 PE
Aquatechnika	Poland	SBR and municipal biological treatment plants	5-1,500 PE
Traidenis	Lithuania	Fiberglass SBR wastewater treatment plants	4-2,000 PE
KLARO GmbH	Germany	SBR small wastewater systems	4-2,000 PE
EnviroChemie	Germany	MBR and hybrid compact systems	50-2,000 PE
BioKube	Denmark	MBBR biological compact plants	5-1,000 PE

EnviDan	Denmark	Municipal and decentralised wastewater solutions	50-2,000 PE
BAGA Water Technology	Sweden	Biofilm and SBR compact municipal systems	5-1,000 PE
TopolWater	Europe	Compact domestic WWTP systems	4-500 PE

The key market trend is modularisation. Standardised tanks, containerised plants, compact biological reactors and digital monitoring packages reduce installation time and make it easier to serve scattered settlements. At the same time, standardisation must be balanced with local adaptation, especially in archipelago, island, cold-climate and high-tourism contexts.

9. Supplier Selection Checklist

The supplier checklist below is intended for pre-procurement market dialogue and for drafting technical specifications. It helps public buyers compare offers on a transparent basis without excluding innovation. The checklist can also be used by technology providers to prepare better evidence for municipalities.

Criterion	Question	Evidence to request
Capacity and load profile	Does the technology cover low season, peak season and shock-load conditions?	Ask for references under seasonal or variable loads.
Nutrient performance	What nitrogen and phosphorus removal can be documented?	Request measured data and sampling protocol.
Certification and compliance	Which EU or national standards apply?	Check EN 12566 where relevant and national approvals.
Operation and maintenance	How much staff time, service frequency and spare parts are needed?	Request O&M manual and service response times.
Energy use	What is expected kWh per m3 or per kg pollutant removed?	Compare operating costs, not only equipment cost.
Sludge management	How often is sludge removed and where does it go?	Include logistics and disposal costs in lifecycle analysis.
Digital capability	Can the system provide alarms, remote monitoring and performance reports?	Use digital features to reduce operator burden.
After-sales support	Is local service available in the country or region?	Require warranty, training and spare-parts plan.
Replication evidence	Has the solution been installed at comparable sites?	Request case studies and contactable references.

A strong procurement specification should focus on performance and verification rather than one named technology. This allows suppliers to propose innovative solutions while still protecting the municipality from underperforming systems. It also makes public funding applications more credible because the project logic is tied to measurable outputs.

Part III - Funding and Incentives

Part III summarises the funding and public-aid dimension of the Hub. The A3.2.3 report shows that support exists at local, regional, national and EU levels, but instruments differ significantly by country and by project stage. Some programmes support feasibility or demonstration; others support full-scale infrastructure, energy efficiency, rural water systems or household-level treatment plants.

10. Funding Landscape by Country

The funding landscape should be interpreted dynamically because calls, rates and eligibility rules change. However, the catalogue demonstrates that municipalities and other project owners should rarely rely on one financing source only. A strong financing plan often combines grants, loans, municipal contribution, supplier service models and possibly private capital.

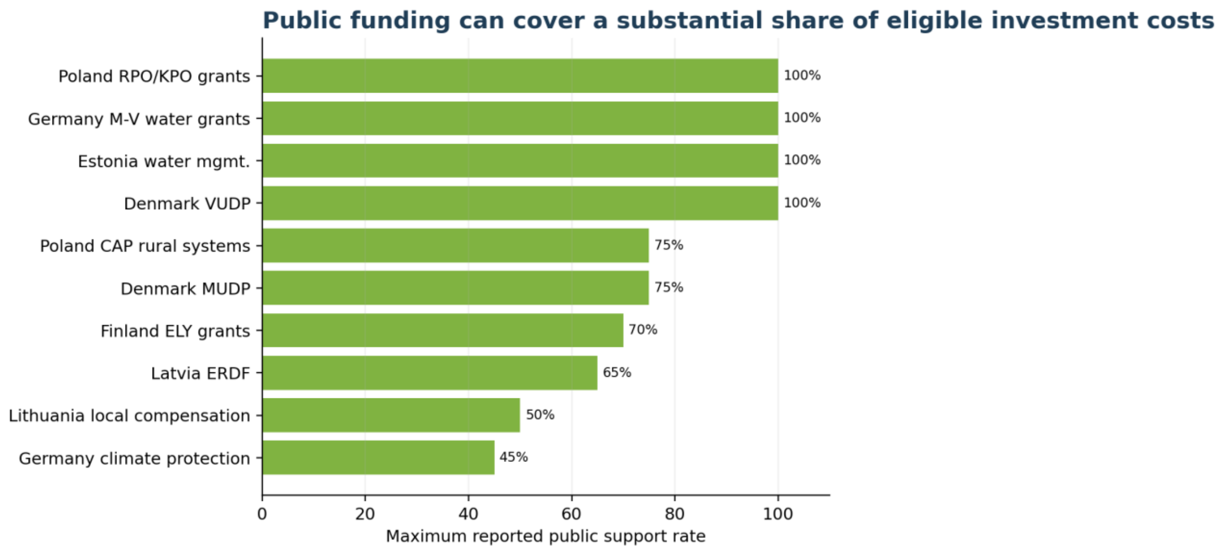

Figure 7. Examples of maximum reported public support rates in selected funding instruments.

Country	Instrument	Typical relevance for D3.2 users
Denmark	MUDP	Grants for development, testing and demonstration of environmental technologies; relevant to pilot and demonstration projects.
Denmark	VUDP	Supports efficiency and quality improvements in the water sector; relevant to aeration, energy efficiency and water-sector innovation.
Estonia	Water Management Programme	Grants for water management, treatment and infrastructure, with support rates varying by applicant type.
Estonia	Wastewater energy-efficiency subsidy	Energy audits and follow-up efficiency investments for wastewater treatment processes.
Finland	Rural public water and wastewater investment aid	Supports small-scale rural water and wastewater infrastructure investments.
Finland	ELY Centre water supply grant	Investment support for water cooperatives, municipalities and associations.
Germany	Mecklenburg-Vorpommern sustainable water management grants	Regional support for water quality, water infrastructure and related conceptual or investment projects.
Germany	DBU project funding	Innovative environmental projects with model or pilot character.
Germany	Federal municipal climate protection funding	Energy and greenhouse-gas reduction measures, including wastewater-related upgrades.
Latvia	Wastewater and sludge management system development	ERDF support for wastewater and sludge infrastructure in small agglomerations.
Lithuania	Municipal compensation for individual WWTPs	Household-level compensation for compliant individual wastewater systems.
Poland	RPO / regional programmes	Wastewater infrastructure support in small agglomerations and rural areas.
Poland	NFOŚiGW water and wastewater programmes	Loan instruments for water and wastewater management inside and outside agglomerations.
Poland	CAP / Intelligent Villages and KPO rural investments	Support for rural wastewater and water infrastructure where centralised networks are inefficient or missing.

A common lesson across countries is that funding favours projects with clear environmental benefits, documented need and realistic implementation capacity. Projects that demonstrate nutrient reduction, energy efficiency, climate resilience or rural service improvement are more likely to match programme objectives. For innovative technologies, pilot or demonstration programmes may be more suitable than standard infrastructure calls.

11. Financing Pathways and Public Aid Logic

The financing pathway should follow the maturity of the project. A municipality at the awareness stage needs data and option analysis. A site with a preferred solution needs design, permits and procurement preparation. A utility planning a full upgrade needs a complete investment budget, lifecycle cost estimate and funding structure. Treating all stages as one large construction project can lead to delays and weak applications.

Project stage	Typical activities	Likely finance route
Problem definition	Sampling, inspections, seasonality mapping, stakeholder consultation.	Municipal budget, project resources, planning grants.
Feasibility and options	Technical studies, option comparison, preliminary costs and permit pathway.	Regional/national planning grants, environmental funds.
Pilot or demonstration	Testing innovative or modular technologies under local conditions.	Environmental technology programmes, innovation grants, Interreg/LIFE/Horizon-style routes.
Full-scale infrastructure	Construction, reconstruction, networks, pumps, WWTP upgrades and monitoring.	ERDF/RPO/KPO-like grants, national environmental funds, subsidised loans.
Operation and optimisation	Energy optimisation, remote monitoring, sludge logistics and service contracts.	Utility budget, savings-based contracts, efficiency subsidies, supplier service models.
Replication and scaling	Multi-site procurement, framework agreements and regional investment packages.	PPP, blended finance, EIB/InvestEU-type instruments and coordinated public programmes.

Public-aid logic should be checked early, especially where private tourism operators, SMEs or suppliers receive an economic advantage. Public utilities and municipalities should document ownership, revenue, tariff logic and procurement approach. Where private operators are involved, the project should clarify whether support is direct aid, de minimis aid, a market-based contract or a public infrastructure measure.

Lifecycle affordability is as important as construction finance. A grant can make construction possible, but the system must still be operated, monitored and maintained. Therefore, each financing plan should include expected annual energy cost, service contracts, sludge management, laboratory analyses, spare parts and staff time. These items should be included in the investor guideline and not left for later negotiation.

Part IV - Business Link and Replication

Part IV presents the business-linking and replication logic. The original A3.2.4 intention was to organise an international matchmaking event between investors or end-users and technology providers. During implementation, partners found that a single centralised event was not the most effective way to engage local municipalities, utilities and suppliers. Competitive sensitivity, language differences, different maturity levels and availability constraints made a distributed engagement model more suitable.

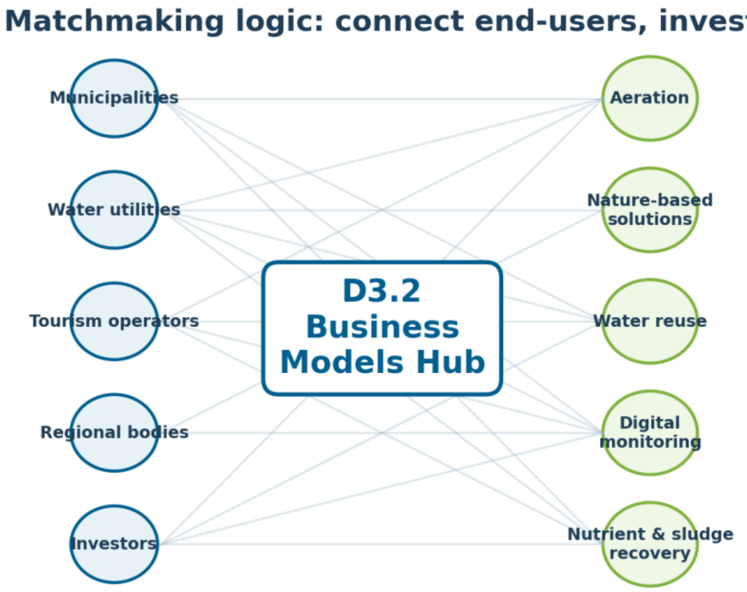

Figure 8. Matchmaking logic connecting end-users, investors and technology families through D3.2.

12. Transnational Business-Link Results

The distributed model used national and bilateral meetings, co-creation workshops, pilot-related exchanges, procurement dialogue and participation in wider conferences or fairs. This approach allowed partners to work in national languages, involve local decision makers and discuss concrete sites. It also avoided the problem of asking competing suppliers to share commercial information in one open online meeting.

Track	Engagement form	Selected organisations
Finland	Survey through ELY Centres; technology-provider consultations; Barosund procurement and permit process; planned dissemination event.	Municipalities, ELY Centres, AVI, SYKE, Ramboll, LUVY, contractors and small-treatment providers.
Denmark	Co-creation engagements on aeration and biological treatment for seasonal loads.	Aalborg University, IMP PAN, Anzai / ANZAIKANTETSU, NK Forsyning, Danish Nature Fund and partners.
Latvia	Investor-priorities conference and co-creation events.	Jurmalas udens, Talsu udens, VNK Serviss, Aqua Brambis, Rotons and Techras Nano.
Poland	Dedicated business-link event on water, wastewater, waste and investment financing.	ERB, ZGOK, Gdansk University of Technology, IMP PAN, EPT, RDLS, Przem-Gri, BIO-TECH, INOX-EXPERT, NOORT ENERGY and Cleaner.
Transnational	EUSBSR Forum, conferences, fairs and partner exchanges.	Cross-partner stakeholders, associated organisations and additional networks.

The outcome is stronger than a simple attendance list. The process generated practical market knowledge, supplier contacts, stakeholder feedback and proposed future consortia. It also demonstrated that business-linking for small wastewater systems is a process, not a one-day event. Trust and technical understanding develop through repeated, site-specific conversations.

13. Matchmaking Framework and Pilot Consortia

The matchmaking framework translates contacts into cooperation. It starts with technology scouting, continues with investor and end-user profiling, aligns technological readiness with site conditions, and then moves into bilateral discussions, site visits, business modelling and concept-note preparation. This process can be repeated by any municipality or region using the Hub.

Phase	Main activity	Output
1. Technology scouting	Identify providers across aeration, biological treatment, wetlands, reuse, monitoring and recovery.	Supplier shortlist by technology family.
2. Investor and end-user profiling	Clarify risk appetite, budget, procurement route, ownership model and desired impact.	Investor/end-user profile.
3. Matching	Align technology readiness, CAPEX/OPEX, permits, operator capacity and transferability.	Indicative pairings and cooperation ideas.
4. Bilateral sessions or site visits	Discuss data, constraints, service model and implementation responsibilities.	Documented minutes and next steps.
5. Post-event acceleration	Prepare concept notes, financing packages, risk register and pilot implementation plan.	Replication of project concepts.

Proposed consortium	Indicative partners	Demonstration focus
Smart Seasonal WWTP	Techras Nano / MOLAIR, RDLS, IMP PAN, APC ERB and selected coastal municipality.	Intelligent aeration, sensors, digital twin logic and predictive control for peak tourism loads.
Circular Nutrient Recovery	Andritz, ZGOK Olsztyn, BIO-TECH, IMP PAN and Przem-Gri.	Phosphorus recovery, sludge valorisation and circular-economy integration.
Nature-Based Tourism Infrastructure	Gdansk University of Technology, KillianWater, APC ERB, Elblag Technology Park and coastal municipalities.	Constructed wetlands, water reuse and green-blue infrastructure for tourist communities.

The proposed consortia are not procurement decisions. They are project concepts showing how the business-linking process can be transformed into future investment pipelines between 2026 and 2032. Each concept should still pass local needs assessment, legal review, financing checks and transparent procurement.

14. Implementation Roadmap

The roadmap shows how D3.2 can remain useful after project reporting. The first step is publication and validation. The second step is the preparation of concept notes for selected municipalities or clusters. The third step is finance and procurement. The fourth step is implementation and monitoring. The final step is replication through municipal networks, associated organisations and regional policy channels.

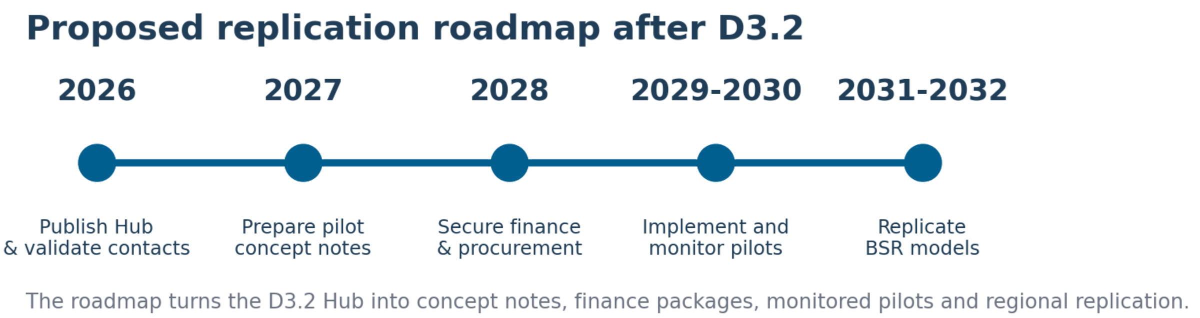

Figure 9. Proposed D3.2 replication roadmap for 2026-2032.

Step	Recommended action
Publish and validate	Share the Hub with project partners, associated organisations, municipalities, utilities and suppliers; collect corrections and additions.
Prepare concept notes	Define site, problem, target technology family, estimated budget, funding route and expected nutrient reduction.
Secure finance and procure	Combine grants, loans, municipal contribution or service model; conduct market dialogue and transparent procurement.
Implement and monitor	Install and test the solution, train operators, monitor performance and communicate results to residents and visitors.
Replicate across BSR	Use verified evidence to prepare further sites, regional clusters and policy recommendations.

The roadmap should be owned jointly by public authorities, utilities and market actors. Public partners provide legitimacy, sites and environmental objectives. Technology providers contribute solutions and operational knowledge. Investors and funding bodies provide financial discipline. Research institutions and NGOs support validation, dissemination and replication.

14.1 Detailed Technology Guidance for Municipal Decision Makers

The supplier database is most useful when it is interpreted together with the local wastewater problem. A small tourist municipality should not begin by asking which supplier is cheapest. It should begin by describing how the site behaves during the season:

- what the permanent population is,
- how many visitors arrive,
- whether flows rise suddenly or gradually,
- what nutrient limits apply,
- and whether the operator can maintain equipment daily, weekly or only periodically.

The sections below describe the main technology families in decision-making language so that non-specialist stakeholders can understand why different solutions may be appropriate in different locations.

Sequencing Batch Reactor (SBR) and compact activated-sludge systems

SBR technology is widely used in small wastewater treatment because it packages biological treatment into cycles of filling, aeration, settling and decanting. It can be compact and relatively standardised, which makes it attractive for rural settlements, small municipal plants and tourism facilities. For seasonal sites, the key question is not whether SBR works in general, but how the control strategy responds to underloading in winter and overloading in summer. Buyers should ask suppliers to explain how aeration, sludge age and cycle length are adjusted when the population equivalent changes rapidly.

The main advantage of SBR systems is that they are familiar to many operators and suppliers. They can often be delivered in prefabricated tanks and adapted to different capacity ranges. The main risk is operational sensitivity: if aeration, settling or sludge withdrawal is not properly managed, performance can deteriorate during peak season. For this reason, SBR systems should be paired with clear operator training, alarm functions and a simple monitoring plan. Where the operator is a small municipality or a small utility, a service agreement with the supplier may be more important than the brand of reactor.

- Use SBR where the site needs compact biological treatment and can provide regular operation and maintenance.
- Request seasonal operating modes and examples from sites with comparable variation in population equivalent.
- Include sludge management in the lifecycle cost, because sludge handling can become a hidden cost in peak tourism periods.

Membrane Bioreactor (MBR) and high-effluent-quality systems

MBR systems combine biological treatment with membrane separation and can produce high-quality effluent. This makes them relevant for sensitive receiving waters, water reuse concepts or sites where discharge standards are stringent. The trade-off is that membranes increase technical complexity, energy demand and maintenance requirements. In a small municipality, an MBR solution should only be selected when the benefits of high effluent quality clearly justify these requirements.

Where water reuse is part of the business model, MBR or similar advanced treatment may become more attractive. Reuse applications such as irrigation, toilet flushing or landscape maintenance require stable quality, risk management and public communication. The investment decision should therefore compare the value of reuse with the cost of additional treatment, monitoring and operational competence. If reuse is not legally or practically possible, a simpler technology may provide better value.

- Use MBR where high effluent quality or reuse is a strategic objective, not merely as a default upgrade.
- Check whether the municipality has access to specialist maintenance and membrane replacement services.
- Define quality classes and reuse restrictions early, because reuse is regulated differently across countries.

Moving Bed Biofilm Reactor (MBBR), fixed-bed and biofilm systems

Biofilm-based systems can be attractive for variable loads because the microbial community grows on carriers or fixed surfaces. This can provide a degree of stability when wastewater flow changes. MBBR and fixed-bed systems are often used in compact units and retrofits, and may be combined with other treatment stages. The technology family is broad, so procurement should specify required performance rather than using a generic label.

For seasonal tourist destinations, the practical questions are whether the biofilm remains active during low-load periods and how quickly the system responds when loads increase. Suppliers should provide information on start-up time, winter operation, peak-load tolerance and maintenance needs. Where the system includes mechanical parts, air blowers or recirculation pumps, energy and service access must be included in the lifecycle comparison.

- Use biofilm systems where stable treatment is required under fluctuating loads and compact installation is important.
- Ask for evidence on start-up, low-load behaviour and recovery after shock loads.
- Compare blower energy, carrier maintenance and service intervals across suppliers.

Constructed wetlands and hybrid nature-based solutions

Constructed wetlands and other nature-based solutions provide polishing, hydraulic buffering and landscape value. They can be particularly suitable for rural tourism areas, campsites, nature destinations and sites where additional green-blue infrastructure improves public acceptance. Their strengths are low energy demand, robustness and co-benefits such as biodiversity and amenity value. Their constraints are land requirement, design expertise and seasonal performance in cold or saturated conditions.

A wetland should not be treated as a simple low-cost add-on. It needs hydraulic design, planting strategy, maintenance access and protection against clogging. It also needs a clear role in the treatment train: primary treatment, secondary treatment or polishing. In many NURSECOAST-II contexts, wetlands are most realistic as polishing or buffering stages rather than as the only treatment solution. They can also be used to make the wastewater investment visible and understandable to the public, which can be useful in tourist areas.

- Use wetlands where land is available and landscape integration is an advantage.
- Check hydraulic loading, winter performance and maintenance duties such as vegetation management and sediment control.
- Communicate nature-based solutions as visible environmental improvements, not only as hidden infrastructure.

Nanobubble aeration and aeration optimisation

Aeration is often one of the largest energy costs in biological wastewater treatment. Nanobubble aeration and other advanced aeration approaches can improve oxygen transfer and help existing plants handle peak loads without immediate reconstruction. For small seasonal WWTPs, this is attractive because it can be introduced as a retrofit and can be combined with digital control. The investment case should quantify energy savings, treatment stability and avoided expansion costs.

The main procurement challenge is verification. Buyers should request pilot data, oxygen transfer evidence, installation requirements and maintenance needs. The supplier should explain how the technology integrates with the existing biological process and control system. Aeration optimisation should also be linked to monitoring: without good process data, it is difficult to prove energy savings and treatment improvements. In a replication context, before-after measurement is essential.

• Use advanced aeration where the existing plant is overloaded mainly by oxygen demand or nitrification limitations.

• Ask for expected kWh savings, monitoring method and before-after comparison approach.

• Combine aeration upgrades with operator training and remote supervision where possible.

Digital monitoring, remote supervision and smart control

Digital monitoring is one of the most transferable interventions for small wastewater systems. It can include flow measurement, dissolved oxygen, temperature, conductivity, alarms, pump status, online nutrient indicators, remote dashboards and predictive maintenance. For small utilities managing several sites, digital monitoring can reduce travel, detect problems earlier and provide evidence for regulators and funders.

The business case for digital monitoring should include both direct and indirect benefits. Direct benefits may include lower energy use, fewer emergency visits and more stable operation. Indirect benefits include better documentation for funding applications, improved public confidence and more credible replication. However, digital tools must be simple enough for local staff and should avoid creating dependence on a proprietary platform that cannot be maintained. Data ownership, alarm response and cybersecurity should be written into the contract.

• Use digital monitoring as a baseline component of most modern seasonal wastewater investments.

• Specify data ownership, cybersecurity, alarm responsibility and reporting format.

• Avoid excessive sensor complexity where maintenance capacity is limited; choose indicators that support actual decisions.

Water reuse and circular water management

Water reuse turns treated effluent into a resource, which can be valuable during dry tourist seasons or in areas where irrigation demand increases at the same time as wastewater production. Possible uses include irrigation of green areas, toilet flushing, landscape maintenance or technical water. Reuse requires a stronger risk-management framework than simple discharge because people may come into closer contact with the water or with irrigated areas.

The investment decision should start with the reuse demand. If there is no reliable local user for reclaimed water, reuse may not justify its additional treatment and monitoring cost. Where demand exists, the project should define quality requirements, storage, distribution, seasonal demand, signage and communication. Reuse can also improve the public narrative of a project because it shows that wastewater is part of a circular local economy. It is therefore both a technical and communication opportunity.

• Use water reuse where there is a clear seasonal demand and a legal route for safe application.

• Define quality classes, storage and end-use restrictions before choosing the treatment process.

• Communicate reuse carefully to avoid misunderstanding and build public trust.

Sludge management, nutrient recovery and valorisation

Sludge management is often underestimated in small wastewater investments. During tourist peaks, sludge production can rise and logistics can become difficult. At the same time, sludge contains nutrients, organic matter and energy potential. Valorisation pathways include composting, biochar, biogas, phosphorus recovery and integration with waste-management systems. These options are most realistic where there is enough scale, a reliable operator and an acceptable regulatory route.

For many small sites, the first step is not advanced recovery but better planning: how often sludge is removed, where it is transported, what it costs and whether seasonal peaks create storage or odour problems. For regional clusters, recovery may become more attractive if several sites send sludge to a shared facility. This is why the Hub links technology suppliers with waste operators and circular-economy actors, not only with wastewater utilities.

• Include sludge in every lifecycle cost calculation and funding application.

• Explore recovery where regional clustering, waste-sector partners or larger plants make logistics feasible.

• Treat circular revenue as additional resilience, not as a guaranteed income unless contracts and markets are established.

14.2 Detailed Funding Notes by Country and Project Stage

The A3.2.3 funding catalogue shows that the Baltic Sea Region contains a wide range of possible financing routes. The following notes translate the catalogue into practical guidance for users of the Hub. They should be checked against the latest call documents before any application is prepared, because support rates, deadlines and eligibility rules change over time. The purpose of this chapter is to help readers understand how to match an investment idea with a plausible funding route.

Denmark: demonstration and water-sector efficiency

Denmark is particularly relevant for demonstration, water-sector innovation and efficiency improvements. The MUDP programme can support development, testing and demonstration of environmental technologies, while VUDP-type support is relevant for projects that improve water-sector efficiency and quality. For a NURSECOAST-II replication project, these instruments are most relevant when the technology is innovative, measurable and capable of wider adoption in the water sector.

A Danish project concept should therefore emphasise demonstrable performance: energy efficiency, nutrient reduction, operational reliability and transferability. Where nanobubble aeration, digital monitoring or new biological treatment configurations are proposed, the application should include a clear test protocol and a plan for communicating results to utilities and municipalities. Demonstration funding is strongest when the project can show that the investment is not a one-off purchase but a replicable model.

For municipalities and utilities, the practical preparation step is to identify whether the investment is routine infrastructure or innovation. Routine replacement should be handled through standard utility planning, while projects that test new aeration, biological control or digital optimisation can be positioned as sector-wide learning projects. This distinction helps avoid weak applications that do not match the selected programme.

Estonia: water management and energy efficiency

The Estonian funding landscape includes water management grants and targeted support for energy-efficiency improvement in wastewater treatment. This is relevant for small or decentralised systems where operational costs are a barrier and where improved pumping, aeration or monitoring can reduce energy consumption. Applications should connect the investment to water-quality objectives and to practical improvements in the management of treatment processes.

For Estonian stakeholders, a strong D3.2-style investment file would combine environmental impact with operational efficiency. It should describe the current energy use, treatment problem, proposed technology, expected savings and monitoring method. If the project starts with an energy audit, the audit should lead directly to a prioritised list of feasible investments rather than remain a standalone study.

Where the project concerns small municipalities or municipal water companies, the application should also show how the investment will be operated after implementation. This includes staff capacity, spare parts, maintenance access and whether the improvement can be transferred to similar sites. Funders are more likely to support projects that demonstrate both environmental value and long-term operational discipline.

Finland: rural water infrastructure and cooperative models

Finland has several routes relevant to rural water and wastewater systems, including support for public rural investments, ELY Centre grants and municipal support for water cooperatives. These are important because many Finnish tourist and archipelago sites are small, dispersed and locally managed. The practical challenge is often not only equipment purchase but the organisation of a reliable service model for sparsely populated areas.

Finnish replication projects should pay particular attention to governance. Water cooperatives, municipalities and associations may all be involved, and voluntary work or local contribution may be part of the financing structure. The investment file should explain who owns the infrastructure, who operates it, how monitoring is handled and how costs are shared over time. Where the project is located in an archipelago context, logistics, winter access and emergency response should be described explicitly.

The Barosund/Inkoo type of context illustrates the importance of permits, local dialogue and service access. A technical solution that works on the mainland may require different logistics in an island or marina environment. Funding applications should therefore include a realistic implementation calendar, transport assumptions and clear responsibilities for sampling, reporting and maintenance.

Germany: regional water grants, innovation and climate protection

Germany offers several funding routes that can be relevant to wastewater upgrades: regional grants for sustainable water management, DBU support for innovative environmental projects, municipal climate-protection funding, the Environmental Innovation Programme and specific support for sewage-treatment plant upgrades in Schleswig-Holstein. The diversity of instruments means that the project framing matters. A project may be presented as water-quality improvement, climate mitigation, innovation, phosphorus removal or municipal infrastructure renewal depending on the chosen programme.

For German stakeholders, the key is to choose the programme that fits the maturity and novelty of the investment. A standard municipal upgrade should not be forced into an innovation programme unless it has demonstrable model character. Conversely, a novel combination of advanced aeration, digital control or resource recovery should not be limited to conventional infrastructure funding if a demonstration route can better cover risk. The application should quantify environmental benefits and explain how the solution goes beyond routine replacement.

The German context is also useful for replication because it shows how the same wastewater project can be connected to several policy objectives: water quality, energy efficiency, climate protection and circular economy. Municipalities should use this to create a more resilient financing strategy, but they should avoid double funding and must clearly separate eligible cost categories.

Latvia: wastewater and sludge infrastructure in small agglomerations

Latvia provides a relevant example of ERDF support for upgrading wastewater and sludge-management infrastructure in small agglomerations. The funding logic is linked to public water services, pollution reduction and improved efficiency of wastewater systems. This fits the NURSECOAST-II focus because seasonal loads often affect smaller settlements and tourism areas where wastewater and sludge management need to be modernised together.

A Latvian investment concept should clearly connect technical measures with pollution reduction. If nanobubble aeration, constructed wetlands, sludge improvements or digital monitoring are proposed, the application should explain how these measures improve the reliability and efficiency of public services. Stakeholder communication is also important, because takeover or improvement of small systems can raise questions about responsibilities, tariffs and service expectations.

The Latvian activity reports also show that investor priorities are not purely technical. Institutional responsibility, communication with users and utility capacity are central to implementation. Funding proposals should therefore describe not only construction works but the institutional arrangements that will keep the system functioning after the investment is completed.

Lithuania: local compensation and household-level systems

Lithuania illustrates the importance of local compensation schemes for individual wastewater treatment plants. These schemes are relevant where centralised networks are not feasible and households or individual buildings need compliant local systems. Although the amounts are smaller than major infrastructure grants, they can be important for dispersed settlements, tourist accommodation and areas where household-level pollution contributes to local water-quality problems.

For Lithuanian replication, the key issue is aggregation. Individual compensation schemes are useful, but environmental impact increases when they are linked to municipal planning, technical standards and information campaigns. Municipalities can use the Hub to define approved technology types, explain maintenance obligations and coordinate monitoring so that many small installations contribute to a coherent nutrient-reduction strategy.

Local compensation should also be accompanied by public information. Households and tourism businesses need to understand that installing a unit is only the first step; maintenance, desludging and responsible use determine whether the environmental benefit is actually achieved. Municipalities can support this through standard guidance, installer lists and periodic reminders.

Poland: regional infrastructure, national environmental funds and rural programmes

Poland offers several relevant routes, including regional operational programmes, NFOŚiGW loan instruments, CAP support for rural individual systems, National Recovery and Resilience Plan investments and PPP possibilities. This diversity is valuable but can be complex. A municipality should first determine whether the site is inside or outside an agglomeration, whether a centralised or decentralised solution is justified, and whether the project is primarily infrastructure, rural development, water reuse, energy efficiency or innovation.

For Polish stakeholders, D3.2 can support preparation of an investment narrative. A project should not only list construction works; it should explain how the works reduce nutrient discharges, improve tourist-area resilience, lower lifecycle cost or support circular economy. If PPP is considered, the public side should prepare careful documentation of demand, risk allocation, tariffs, service standards and long-term affordability. For small municipalities, cluster procurement or regional cooperation may improve both market response and financing credibility.

Poland is also important for dissemination because municipal networks can spread the Hub to many local governments. The report can therefore be used as a workshop tool: one session to define needs, one session to compare technologies, one session to review funding options and one session to prepare concept notes. This practical use is central to the Business Models Hub idea.

Supranational and blended finance routes

At the Baltic Sea Region level, Interreg, LIFE, Horizon Europe, InvestEU and European Investment Bank-related instruments may support different parts of the investment chain. Interreg is suitable for cooperation, pilot testing and transfer. LIFE can support environmental and climate demonstration. Horizon Europe is relevant for research and innovation partnerships. InvestEU and EIB routes become more relevant for larger, bankable investment packages or aggregated portfolios.

The practical recommendation is to match the funding level to the maturity and scale of the project. A single small municipal plant may not justify a complex EU finance package, but a portfolio of similar seasonal wastewater sites across a region could. The D3.2 matchmaking framework can help create such portfolios by connecting municipalities with shared needs and suppliers with scalable solutions.

Blended finance should be considered when a project has public environmental value but also generates operational savings or revenue. Examples include energy-saving aeration, reuse systems, sludge valorisation or regional service platforms. The public contribution can reduce risk, while private or loan finance can scale the solution beyond one pilot.

14.3 Procurement and Market Dialogue Guidance

Procurement is the point where investment guidance becomes legally and financially binding. A well-prepared procurement process gives suppliers enough information to propose suitable solutions and gives the public buyer enough evidence to compare offers fairly. A weak procurement process can produce underpriced bids, incompatible equipment or later disputes about performance. For seasonal wastewater sites, the procurement documents should reflect actual seasonal conditions.

Before publishing a tender, the buyer should consider a structured market dialogue. This does not mean selecting a supplier informally. It means asking the market what solutions exist, what data suppliers need, what capacity ranges are realistic and what performance requirements can be verified. The dialogue should be transparent, documented and consistent with public procurement rules. The output should improve the tender specification for all bidders.

A performance-based specification should include the baseline influent load, the expected peak load, required effluent standards, monitoring obligations, operator training, spare-parts expectations, warranty, service response time and commissioning procedure. Where innovation is encouraged, the tender can define functional requirements rather than prescribe one equipment type. This allows suppliers to propose SBR, MBBR, aeration optimisation, wetlands, digital monitoring or hybrid solutions if they meet the same performance goals.

Evaluation criteria should balance price and quality. For example, a tender may evaluate lifecycle cost, nutrient removal, energy use, operational simplicity, references, local service availability and replication potential. If only lowest purchase price is used, the buyer may unintentionally select a solution with high operating cost or insufficient support. The Hub therefore recommends total cost of ownership as a standard evaluation element.

• Prepare an influent-data annex with peak-season and low-season assumptions.

• Use market dialogue to test whether performance requirements are realistic.

• Evaluate lifecycle cost and service support, not only purchase price.

• Require commissioning, training and a monitoring plan as part of delivery.

• Document lessons learned so that future municipalities can replicate the procurement more easily.

Contract management after procurement

A signed contract is not the end of the investment process. For small WWTP projects, the first year of operation is critical because seasonal variation tests the system under real conditions. The contract should define acceptance testing, seasonal performance review, defect correction and data reporting. If the plant is commissioned outside the peak season, the contract should include a follow-up check during the next high-load period.

The buyer should also keep a simple operational log. The log should record flow, energy use, alarms, sampling results, sludge removal, maintenance visits and complaints or odour events. This information is valuable for troubleshooting, for funders and for replication. It also helps demonstrate that public money has produced measurable environmental benefit.

Procurement documentation checklist

1. Baseline data and seasonal design assumptions.
2. Environmental objectives and discharge requirements.
3. Functional requirements and acceptable technology families.
4. Monitoring and verification plan, including who pays for analyses.
5. Operator training and handover plan.
6. Warranty, service availability and response times.
7. Lifecycle cost breakdown and energy assumptions.
8. Sludge management and disposal responsibilities.
9. Data ownership and reporting arrangements for digital systems.
10. Replication note requirement after first full operating season.

14.4 Communication and Stakeholder Engagement Guidance

Wastewater investments are often invisible until something goes wrong. In tourist destinations, however, wastewater quality is directly connected to bathing waters, local reputation, visitor satisfaction and the attractiveness of the area. Communication should therefore be part of the business model, not an afterthought. The public should understand why the investment is needed, what environmental benefit it creates and how construction or operation may affect them.

Different stakeholders need different messages:

- **Residents** may care about tariffs, odour, construction disturbance and water quality.
- **Tourism operators** may care about reputation, service reliability and environmental branding.
- **Regulators** may care about compliance and monitoring.
- **Suppliers** may care about clear technical data.
- **Investors** may care about risk, revenue and replication.

A good communication plan recognizes these differences and avoids overly technical language.

For nature-based solutions and reuse, communication is especially important. Wetlands can be presented as landscape features that improve biodiversity and water quality, but they also require explanation of maintenance and safety. Water reuse can be perceived positively as circular economy or negatively if risks are not explained. Transparent information about quality classes, restrictions and monitoring can prevent misunderstandings.

• Prepare a one-page public explanation of the problem and expected benefits.

• Use maps, photos and simple diagrams to show where the system is located and how it works.

• Communicate during design, construction, commissioning and first-season operation.

• Share monitoring results in an accessible form when possible.

• Connect wastewater investment to sustainable tourism, bathing-water quality and Baltic Sea protection.

Suggested public messages

The following messages can be adapted for local communication materials. First, seasonal wastewater is a predictable pressure that can be managed with the right investment. Second, the investment protects local waters and the tourism economy. Third, modern systems can save energy, improve monitoring and reduce nutrient pollution. Fourth, residents and tourism operators play a role through responsible water use, correct connection to systems and support for maintenance activities.

Communication should avoid blaming visitors or local businesses. The purpose is to show that a shared seasonal challenge can become a shared solution. Municipalities can use the Hub to organise stakeholder meetings around practical questions:

- what is the problem,
- what solution is proposed,
- what will happen during construction,
- how will performance be monitored,
- how will the community benefit?

14.5 Monitoring, Evaluation and Replication Indicators

Monitoring should serve three purposes: operational control, regulatory compliance and learning for replication. A project that only collects data for compliance may miss useful information about energy savings, seasonal resilience and user acceptance. A project that only collects research data may overburden the operator. The monitoring plan should therefore be proportional and practical.

Recommended indicators include influent flow, treated volume, energy use, key effluent parameters, sludge volumes, alarm frequency, maintenance visits and operating cost. For projects with nature-based solutions, additional indicators may include hydraulic performance, vegetation condition and public acceptance. For reuse projects, indicators should include reuse volume, quality class, storage safety and end-use restrictions. For digital monitoring projects, uptime, alarm response and data usability should be tracked.

Replication indicators should be simple enough to compare across sites. A municipality considering adoption wants to know whether the solution worked, how much it cost, what problems occurred and what staff capacity was needed. Therefore, each pilot or investment should produce a short replication note with: site type, capacity, technology, cost, funding route, permits, performance results, lessons learned and contact point.

• **Operational indicators**: flow, loading, energy use, alarms, maintenance and sludge removal.

• **Environmental indicators**: nitrogen, phosphorus, organic matter and receiving-water sensitivity where relevant.

• **Financial indicators**: CAPEX, annual OPEX, financing share, service cost and lifecycle assumptions.

• **Social indicators**: complaints, public feedback, tourism operator engagement and visibility of results.

• **Replication indicators**: transfer conditions, procurement lessons, operator requirements and recommended changes.

First-season evaluation

The first complete high season after installation should be treated as a structured learning period. The operator should compare actual flows and loads with the design assumptions, record any process instability and assess whether the monitoring system provided useful alerts. If the system performed well, the evidence should be prepared for dissemination. If problems occurred, the causes should be documented and corrected before replication is promoted.

Evaluation should be practical and honest. A pilot that identifies design improvements is still valuable if those lessons are captured. The worst outcome is not a technical adjustment; it is a project that produces no usable evidence because data, costs and responsibilities were not documented.

14.6 Example Structure for a Local Investment Concept Note

A local concept note should be short enough for decision makers to read but complete enough for funders and engineers to assess. The template below can be used by municipalities, utilities or tourism operators when moving from general interest to a concrete project pipeline.

1. Site and problem description

Describe the location, population served, tourism pattern, current system, receiving water and main compliance or performance issue.

2. Seasonal load evidence

Summarise available flow data, visitor numbers, sampling results and peak-season assumptions. Identify data gaps.

3. Investment objective

State the environmental and operational objective, such as nutrient reduction, energy saving, reuse, sludge improvement or reliability.

4. Preferred technology family

Identify one or more technology families and explain why they fit the site. Avoid naming a single supplier unless procurement has already been completed.

5. Preliminary budget and lifecycle cost

Provide estimated capital cost, operating cost, energy, service, sludge, monitoring and staff implications.

6. Funding route

Identify possible grants, loans, municipal contribution, PPP, service contract or blended finance. State the next application deadline if known.

7. Risk register

Summarise permitting, technical, cost, supplier, public acceptance and climate risks with mitigation measures.

8. Procurement approach

Explain whether market dialogue, open tender, framework procurement, design-build or service contract is expected.

9. Monitoring and communication

Define the core performance indicators and how results will be communicated to stakeholders.

10. Replication value

Explain how the project can generate lessons for other municipalities or tourism sites in the Baltic Sea Region.

This concept-note format is deliberately concise. It helps stakeholders identify whether a project is ready for feasibility work, funding application or procurement. It also creates a common language between municipalities, suppliers, funders and project partners. Where the concept note is prepared for a funding call, it should be adapted to the exact terminology and eligibility criteria of that call.

14.7 Stakeholder Roles in a Replication Project

Replication succeeds when responsibilities are explicit. Seasonal wastewater projects often fail not because the technology is unavailable, but because no actor has been assigned to maintain the system, collect data, communicate with users or prepare the next funding application. The following role descriptions can be used during the first stakeholder meeting of a new project.

Municipality or local authority

Defines local development objectives, owns or coordinates public infrastructure, ensures alignment with spatial planning, communicates with residents and may lead the funding application. The municipality is often the convenor even where the utility or a private operator implements the technical solution.

Water utility or public service provider

Provides operational knowledge, existing asset data, staff capacity, sampling history and maintenance routines. The utility should be involved from the beginning because it will often carry operational responsibility after the project is built.

Tourism operator or site owner

Provides information on visitor numbers, seasonal water use, customer expectations and on-site constraints. Tourism operators can also help communicate environmental improvements to visitors and may contribute to co-financing where the solution benefits their business.

Technology provider

Explains technical options, supplies references, prepares preliminary concepts and identifies what data is needed for design. Providers should avoid overpromising and should support performance verification after installation.

Research or technical expert

Supports independent assessment, sampling design, environmental interpretation and comparison between options. Independent expertise is especially valuable where innovative technologies are proposed or where several suppliers offer different solutions.

Funding body or investor

Tests whether the project is financially coherent, whether risks are documented and whether the expected environmental impacts justify support. Funders can also advise on eligibility before a full application is written.

Regional network or NGO

Supports dissemination, stakeholder engagement and replication to other municipalities. Networks are useful for turning one local project into a regional learning process.

14.8 Practical Scenarios for Using the Hub

The following scenarios show how different users can apply the Hub. They are illustrative and should be adapted to local conditions.

Scenario A - small coastal village with an overloaded summer WWTP

The municipality has a plant that meets requirements in winter but struggles in July and August. The Hub suggests starting with seasonal load analysis, checking aeration capacity, adding digital monitoring and comparing retrofit options such as advanced aeration or modular biological capacity. Funding may be sought under water-management or energy-efficiency instruments. Procurement should include before-after monitoring.

Scenario B - campsite or marina outside the sewer network

A tourism operator needs a decentralised solution and wants to reduce environmental risk. The Hub suggests comparing compact biological systems, nature-based polishing and possible water reuse. The business model may involve private investment, local compensation, a service contract or cooperation with the municipality. Public communication should connect the solution to responsible tourism.

Scenario C - archipelago site with difficult logistics

A small settlement or harbour has limited access for maintenance and sludge transport. The Hub suggests prioritising robust systems, remote monitoring, clear service arrangements and careful sludge planning. Nature-based polishing may be attractive if land is available, but winter operation and access must be checked. Funding should include planning and operational feasibility, not only construction.

Scenario D - region seeking replication across several small municipalities

A regional authority or municipal network wants to reduce nutrient loads at multiple small sites. The Hub suggests using a cluster approach: common needs assessment, shared supplier dialogue, framework procurement, joint monitoring templates and a combined funding strategy. This can improve market response and make the investment package more attractive to larger funders.

Scenario E - utility exploring circular sludge and nutrient recovery

A utility or waste operator wants to reduce sludge costs and create circular value. The Hub suggests assessing scale, logistics, regulatory routes and partnerships with waste-management or agricultural actors. Advanced recovery may not fit every small plant, but a regional cluster can make shared treatment or valorisation more feasible.

These scenarios demonstrate why D3.2 is organised as a hub. No single technology, funding instrument or business model fits all sites. The value of the Hub is to help stakeholders ask the right questions in the right order and to avoid treating seasonal wastewater as a narrow equipment purchase.

14.9 Publication Summary Messages

For dissemination, the following short messages can be used in presentations, policy briefs or local workshops. They summarise the report in language suitable for municipal and regional audiences.

- Seasonal wastewater is predictable; therefore it can be planned for instead of treated as an emergency.
- Small tourist destinations need flexible systems that work in both low season and peak season.
- The best investment is the one that can be operated reliably after the grant period ends.
- Supplier selection should be based on evidence, lifecycle cost and service support, not only on purchase price.
- Digital monitoring and process optimisation can improve existing plants and generate data for future investment.
- Nature-based and reuse solutions can strengthen the environmental identity of tourism destinations when they are designed and communicated well.
- Funding success depends on linking the project to water quality, energy efficiency, climate resilience, rural services or innovation.
- Business-linking works best as a distributed process of dialogue, site visits and follow-up, not as one isolated event.
- Every pilot should leave behind a replication note: what worked, what it cost, what changed and what should be done differently next time.

14.10 Glossary of Key Terms

Population equivalent (PE)

A measure used to express the organic biodegradable load of wastewater. It allows different wastewater sources to be compared using a common unit.

Seasonal load

A recurring increase or decrease in wastewater flow and pollutant load caused by tourism, events, summer houses or other seasonal activities.

Decentralised wastewater treatment

Treatment located close to the source of wastewater, often serving individual buildings, small settlements, campsites, marinas or rural communities.

Lifecycle cost

The total cost of an investment over time, including design, construction, energy, operation, maintenance, sludge, monitoring, replacement and decommissioning.

Nature-based solution

A solution using natural processes or ecosystems, such as constructed wetlands, to support treatment, buffering or polishing.

Water reuse

The use of treated wastewater for beneficial purposes, such as irrigation or technical water, under appropriate quality and safety conditions.

Public-private partnership (PPP)

A cooperation model in which public and private actors share responsibilities, risks and resources for infrastructure or service delivery.

Market dialogue

A transparent pre-procurement process in which a public buyer gathers information from suppliers before finalising tender specifications.

Replication

The transfer of a tested solution, method or business model to another site or region with appropriate adaptation.

Business Models Hub

The D3.2 deliverable combining investor guidance, supplier information, funding routes and matchmaking results into one decision-support publication.

14.11 Extended Supplier Profile Notes

The supplier database in A3.2.2 is a screening tool. It is not a procurement recommendation and should not be interpreted as a closed list. The following profile notes help municipalities understand what kind of questions each supplier category raises. They are written in general terms because the suitability of any company or technology depends on local site data, certification, service availability and procurement rules. Before any purchase, buyers should request updated technical documentation, references and confirmation of capacity range.

Uponor Infra

Uponor-type solutions are relevant where municipalities need modular infrastructure and decentralised wastewater components supported by an established regional market presence. The buyer should check whether the proposed package covers treatment only or also pipes, tanks, pumping and monitoring. For seasonal sites, the key issue is how the system behaves during intermittent use and whether the service network can respond during tourist peaks.

GRAF Group

GRAF-type prefabricated systems are relevant for small and decentralised installations where plastic tanks and compact biological processes are suitable. Municipalities should check whether the system is certified for the intended use, whether phosphorus removal is included and whether local installers are authorised. For tourism sites, the sizing should reflect peak use and not only the number of permanent residents.

Wavin

Wavin-type suppliers are often relevant for infrastructure systems, pipework, modular water-management components and biofilm-related solutions. Where a wastewater investment includes network optimisation, infiltration reduction or resilient pipe systems, such suppliers can contribute beyond the treatment plant itself. The buyer should examine compatibility with existing assets and long-term maintenance arrangements.

EkoWodrol

Containerised or activated-sludge systems from suppliers such as EkoWodrol can be relevant for municipal upgrades and small plants where prefabrication shortens construction time. The procurement should clarify whether the supplier provides only equipment or also design, installation, commissioning and after-sales service. Seasonal operation should be demonstrated with load scenarios and operator instructions.

Aquatechnika

Aquatechnika-type suppliers are relevant for household, small municipal and decentralised biological treatment systems. In scattered rural settlements, these systems may be part of a municipal programme for individual treatment plants. The buyer should ensure that household-level systems are supported by maintenance guidance, desludging arrangements and user information.

Traidenis

Fiberglass SBR systems such as those offered by Traidenis-type suppliers may be suitable where corrosion resistance, compact installation and prefabrication are priorities. The main checks are capacity range, nutrient-removal performance, certification and local service availability. For Baltic tourist areas, cold-climate operation and intermittent occupancy should be explicitly discussed.

KLARO GmbH and ATB Water

German SBR suppliers such as KLARO and ATB Water illustrate a mature market for small treatment systems. Buyers should compare systems not only by tank size but by control logic, maintenance frequency, effluent quality, energy use and service network. Where public funding is used, documentation of compliance and references can be decisive.

EnviroChemie and ClearFox

Suppliers of MBR, MBBR and containerised systems can be relevant for higher-performance or industrially influenced wastewater contexts. Their systems may be technically strong but must be matched to local operation capacity. Municipalities should check whether advanced treatment performance requires specialist staff, chemicals, membrane replacement or remote support.

BioKube and Watersystems Danmark

Danish compact biological systems are relevant to decentralised treatment and may fit smaller communities, campsites or island sites. Seasonal resilience, low-maintenance operation and service access should be checked carefully. Where systems are installed in tourism areas, the buyer should also consider how easy it is to explain operation and maintenance duties to non-specialist owners.

EnviDan and Krüger / Veolia group

Engineering-oriented suppliers and consultants can support municipal-scale planning, biological process design and larger wastewater solutions. They may be most useful where the project involves feasibility studies, upgrade design or integration with existing utility systems. The buyer should define whether the need is independent engineering support, technology supply or a combined design-build package.

Nordic Water and BAGA Water Technology

Swedish and Nordic suppliers provide examples of compact treatment, biofilm systems and nutrient-removal approaches suitable for northern conditions. For replication, municipalities should request references in comparable climates and with similar seasonal load profiles. Service distance and spare-parts availability should be part of the evaluation.

TopolWater and BORDA-type decentralised approaches

TopolWater, BORDA and related decentralised approaches are relevant where small domestic or community-scale solutions are needed. These systems can support dispersed settlements, but maintenance and user behaviour are critical. Municipal programmes should therefore combine equipment support with education, inspection and desludging systems.

Fluence and global containerised systems

Global suppliers of containerised or MABR-type systems can bring advanced technology and rapid deployment. The benefit is modularity and possible high performance; the risk is dependence on international service chains. Small municipalities should check local representation, spare-parts logistics and whether the system is oversized for local needs.

Digital monitoring suppliers

Digital providers such as IoT, sensor and analytics companies are increasingly important even when they do not supply the treatment plant itself. Their role is to make performance visible, reduce response time and support evidence-based operation. Buyers should specify data ownership, dashboard access, alarm responsibility and compatibility with existing utility systems.

Integrator and construction companies

Engineering contractors such as Przem-Gri-type companies play a key role in turning a technology concept into a functioning site. They manage civil works, installation, coordination and practical problem solving. For small municipalities, the integrator may be the most important partner because it connects design, equipment, permits and construction management.

Waste and circular-economy partners

Waste-management companies such as ZGOK-type organisations are relevant when sludge, nutrients, composting, biogas or other circular outputs are considered. They help move the discussion beyond the wastewater fence line. A municipality should involve such partners early if sludge valorisation or nutrient recovery is part of the business model.

Research and validation partners

Institutions such as IMP PAN, Gdansk University of Technology, Aalborg University, KTU and LUKE contribute evidence, testing and independent interpretation. Their role is not to replace suppliers but to reduce uncertainty, support comparison and improve replication quality. Research partners are particularly valuable for pilot technologies and for documenting environmental impact.

Innovation hubs and municipal networks

Elblag Technology Park, ERB and similar organisations can connect municipalities, suppliers and funders. They help translate project results into market dialogue and future concept notes. This function is especially important where small municipalities lack the capacity to scan the market alone.

14.12 Extended Funding Instrument Interpretation

The funding instruments listed in A3.2.3 can be difficult for municipalities to compare because they use different language. Some instruments speak about environmental technology, some about rural infrastructure, some about energy efficiency and some about municipal climate protection. In practice, one wastewater project can often be described through several policy lenses. The choice of lens should be honest and based on the strongest public benefit of the investment.

When the main problem is nutrient discharge, the project should emphasise water quality, eutrophication reduction and compliance with wastewater obligations. When the main problem is high energy cost, the project should emphasise aeration optimisation, pumping efficiency and greenhouse-gas reduction. When the main problem is missing service in rural areas, the project should emphasise access, public health, rural living conditions and cost-effective decentralised infrastructure. When the project tests a new technology, the application should emphasise demonstration, replication and learning.

Funding applications are stronger when they include a clear baseline. A baseline does not need to be perfect, but it should be credible. It can include seasonal visitor numbers, flow data, sampling results, energy bills, operator logs, sludge transport records or evidence of overflows and complaints. Without baseline data, it is difficult to prove that the investment solves a real problem. The Hub therefore recommends a small pre-investment data package for every project.

Another common weakness is underestimating operating costs. Funding calls often focus on capital expenditure, but the municipality must operate the system after completion. Applications should therefore include a lifecycle table with expected annual energy, maintenance, monitoring and sludge costs. This demonstrates that the applicant has considered long-term affordability and reduces the risk of building infrastructure that cannot be maintained.

For public-aid compliance, the project owner should identify who benefits economically. If the beneficiary is a public utility providing a public service, the logic may be different than if a private campsite receives a treatment system. If a private operator is involved, the project may need de minimis documentation, market-rate contracts or clear public-interest justification. These questions should be resolved before signing grant agreements.

Finally, funding strategy should be staged. A municipality may use a small planning grant or project resource to prepare the feasibility study, then a demonstration grant for pilot technology, then a national infrastructure programme for full-scale roll-out. This staged approach is more realistic than trying to finance an uncertain project as one large investment from the beginning.

- Match the application narrative to the strongest policy objective: water quality, energy, rural services, innovation or circular economy.
- Prepare baseline evidence before choosing the funding call.
- Include lifecycle affordability, not only construction budget.
- Check public-aid and procurement implications before involving private beneficiaries.
- Consider staged financing: planning first, demonstration second, full-scale investment third.
- Use regional cooperation to aggregate several small sites where one site is too small for larger finance routes.

14.13 Quality Criteria for the D3.2 Deliverable

The deliverable should be updated if partners provide additional validated supplier information, new funding calls or pilot performance evidence. Updates can be issued as annexes or as a revised version of the Hub. The core logic should remain stable: define the seasonal problem, screen technologies, assess finance, manage risks, procure carefully, monitor performance and replicate lessons.

- Traceability,
- Usability;
- Readability;
- Completeness;

- Replication value;
- Publication quality.

14.14 Implementation Readiness Self-Assessment

Before a municipality or utility launches procurement, it should test whether the project is ready. The following self-assessment is designed as a practical internal review. It can be completed in a workshop with municipal staff, utility operators, a technical adviser and, where appropriate, tourism stakeholders. The aim is not to create bureaucracy but to prevent expensive mistakes caused by missing information.

A project is at the awareness stage when the problem is known but data is weak. It is at the preparation stage when seasonal loads, site constraints and technology families have been described. It is at the investment stage when the preferred option, budget, funding route, risk register and procurement method are defined. It is at the implementation stage when contracts, permits, monitoring and communication are ready. Moving too quickly from awareness to procurement is one of the main risks for small wastewater projects.

- Problem definition is clear and linked to seasonal load or nutrient reduction.
- Baseline data exists for at least one high season or a credible proxy has been documented.
- The receiving water and environmental sensitivity are described.
- At least two technology families have been compared.
- The operator has confirmed that the proposed solution can be maintained locally.
- CAPEX and OPEX have both been estimated.
- A funding route has been identified and eligibility conditions have been checked.
- Permitting responsibilities and likely approvals are known.
- The procurement method is consistent with national rules.
- A monitoring and communication plan is included.

If several answers are negative, the project should remain in preparation rather than move to tender. Additional sampling, market dialogue or feasibility work may be cheaper than correcting an unsuitable installation later. Funders also benefit from this self-assessment because it shows that the applicant understands implementation risk and has a plan to manage it.

14.15 How to Run a D3.2 Local Workshop

The Business Models Hub can be used as the basis for a half-day local workshop. This is recommended for municipalities that want to move from general interest to a concrete concept note. The workshop should include municipal decision makers, utility operators, technical advisers, tourism representatives and, where possible, a regional funding or environmental authority. Suppliers may be invited to a separate market-dialogue session after the municipality has defined its needs.

The workshop should begin with a simple problem map: where wastewater is generated, which sites are seasonal, where the treatment system is located, what the receiving water is and where complaints or compliance risks occur. This map does not need to be technically perfect; it is a shared starting point. The next step is to list seasonal drivers such as summer houses, hotels, campsites, marinas, restaurants, festivals or day visitors. The group should then identify which drivers are predictable and which are uncertain.

The second part of the workshop should use the technology guidance. Participants should not choose a supplier at this stage. Instead, they should identify whether the site needs retrofit optimisation, new decentralised treatment, nature-based polishing, water reuse, sludge improvements or monitoring. The third part should review funding routes and decide whether the next output should be a feasibility study, a pilot proposal, a funding application or a procurement plan.

- Session 1: problem map and seasonal load drivers.
- Session 2: current system performance and operator constraints.
- Session 3: technology family screening using the Hub criteria.

- Session 4: funding route and public-aid questions.
- Session 5: next-step concept note, responsible persons and timeline.

The workshop output should be a two-page action note. It should list the agreed problem, missing data, preferred technology families, funding options, risks and the next responsible person. This turns discussion into a project pipeline and prevents the Hub from remaining only a report on a shelf.

14.16 Data Requirements for Seasonal Wastewater Planning

Data requirements should be realistic. Small municipalities may not have continuous monitoring, but they usually have some useful information: water consumption records, pump run-time, electricity bills, sludge removal records, tourist statistics, accommodation capacity or operator observations. Combining these sources can create a usable seasonal profile. The objective is to make assumptions explicit, not to reach perfect scientific certainty before acting.

The minimum data package should include the served population in low season and high season, approximate flows, current treatment performance, main equipment condition, sludge removal frequency and known environmental constraints. If possible, the package should include at least one sampling round during the peak period and one during the low period. Where data is missing, the concept note should state the assumption and explain how it will be verified.

Better data improves technology selection. For example, a plant with high organic load but sufficient hydraulic capacity may need process optimisation, while a plant with hydraulic overload may need storage, infiltration reduction or modular capacity. A site with water scarcity may justify reuse, while a site with land availability may justify a wetland. Without data, all of these options can appear equally plausible and procurement becomes supplier-driven.

- Monthly or weekly flow estimate.
- Peak-season population or visitor estimate.
- Influent and effluent sampling results where available.
- Energy consumption and aeration/pumping data.
- Sludge removal frequency and cost.
- Known overflows, odour events, complaints or compliance failures.
- Receiving-water sensitivity and distance to bathing or tourism areas.
- Available land and access constraints.
- Current operator capacity and service arrangements.
- Expected development or tourism growth over the next five to ten years.

14.17 Long-Term Sustainability of Business Models

A business model is sustainable when it remains affordable, operable and environmentally effective after project funding ends. For small wastewater systems, this means that the operating budget must cover energy, maintenance, monitoring, sludge and replacement. It also means that responsibilities must survive staff changes, elections, seasonal business cycles and supplier turnover. A project that depends on one enthusiastic person is vulnerable unless procedures are documented.

Long-term sustainability also requires flexibility. Tourism patterns may change, climate conditions may create droughts or intense rainfall, and environmental standards may become stricter. Modular systems, monitoring and adaptive contracts help manage this uncertainty. The Hub therefore recommends that investment decisions include a review point after the first high season and a second review after three years. These reviews can confirm whether the system should be adjusted, expanded or replicated.

The strongest business models combine public purpose with operational discipline. Public authorities define the environmental objective and ensure accountability. Utilities or service providers maintain the system. Suppliers support performance and training. Funders require evidence. Communities and tourism operators understand why the investment matters. When these roles are aligned, seasonal wastewater management can move from a recurring problem to a platform for sustainable tourism and regional innovation.

15. Conclusions and Recommendations

The Business Models Hub confirms that seasonal wastewater management in near-coast tourist areas is both an environmental obligation and a business opportunity. Reducing nutrient discharges requires technical solutions, but successful implementation also depends on financing, procurement, public communication and long-term operation. The four GoA 3.2 activities together provide a practical foundation for this work.

- Treat seasonality as a design condition. Use monthly or weekly load scenarios and do not rely only on annual averages.
- Start with a technology family, not a supplier name. Use performance-based requirements and request evidence from comparable sites.
- Link technology choice to lifecycle cost and operator capacity. A system that cannot be maintained locally is not sustainable.
- Check funding opportunities early and match them to project maturity: planning, pilot, full-scale investment or replication.
- Use distributed matchmaking. National language, local context and bilateral trust-building are essential for engaging small municipalities and SMEs.
- Document monitoring and communication plans. Public acceptance improves when the wastewater investment is linked to bathing-water quality, sustainable tourism and local resilience.
- Prepare replication packages. Each pilot should generate data, procurement lessons, cost information and user-friendly communication material for other sites.

For stakeholders, it provides a practical starting point for investment decisions in small and seasonal wastewater systems across the Baltic Sea Region.

Annex A - Quick Checklists

A.1 First discussion checklist for a municipality

- What is the permanent population and what is the peak-season equivalent population?
- Which months create the highest hydraulic and pollutant load?
- What are the current effluent results and where are the compliance risks?
- Is there enough land for nature-based polishing or buffering?
- Who will operate the system and how often can staff visit the site?
- Which funding calls, municipal budgets or service models are realistic?
- How will residents, tourism operators and visitors be informed?

A.2 Supplier dialogue checklist

- Ask for references in seasonal, coastal, rural or cold-climate sites.
- Request nutrient-removal data and the sampling method used.
- Ask how the system handles low-load periods and sudden peak loads.
- Request lifecycle cost estimate, energy use, spare-parts plan and service coverage.
- Clarify what monitoring equipment is included and who owns the data.
- Clarify responsibility for permits, training, commissioning and warranty.

A.3 Funding preparation checklist

- Prepare a short problem statement linked to nutrient reduction and water quality.
- Describe the target group and public benefit, including tourism and local resilience.
- Provide preliminary cost estimate split into design, equipment, construction, monitoring and operation.
- Explain why the selected technology is appropriate and transferable.
- Include risk register, procurement approach and implementation timeline.
- Check public-aid rules before supporting private operators or service providers.

Annex B - Source Reports Consolidated into D3.2

Reference	Source report	Contribution to D3.2
A3.2.1	Investor priorities and transferable investor guidelines	Provides the investor-oriented decision framework and transferable guideline logic.
A3.2.2	Technology suppliers / companies database for municipalities to foster WWTP investments	Provides supplier screening, technology categories and market observations for small WWTPs.
A3.2.3	Incentive for business funding and public aid programmes	Provides country-by-country funding opportunities and financing mechanisms.
A3.2.4	Transnational Business Link Event	Provides business-linking evidence, engagement results, organisations and proposed consortia.
Application Form v.16	NURSECOAST-II work plan and GoA 3.2 deliverable definition	Provides formal deliverable context, activity responsibilities and work-package logic.

The Hub should be updated if new funding calls, supplier data or pilot-performance evidence becomes available.

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