

Project

EAPA_0060/2022 - IsoMicroHydro

1. Project Identification

1.1. Project Info

1.1.0. Code number:

EAPA_0060/2022

1.1.1. Acronym:

IsoMicroHydro

1.1.2. Title:

Micro and Small Scale Hydropower for clean sustained energy in Atlantic islands/isolated areas

1.1.3. Type of project:

Traditional

1.1.4. Start date:

01/01/2024

1.1.5. End date:

31/12/2026

1.1.6. Project duration in months:

36

1.2. Area of Intervention

1.2.1. Programme Priority:

2 - Blue /Green environment

1.2.2. Programme specific objective:

RSO2.1. Promoting energy efficiency and reducing greenhouse gas emissions

1.2.3. Fields of intervention:

053. Smart Energy Systems (including smart grids and ICT systems) and related storage

1.3 Total Budget

Funding amount (ERDF):

1,655,515.49 €

Co-financing rate:

75.00 %

Partners contribution:

551,838.50 €

National public:

390,374.64 €

National private:	102,081.73 €
Other fundings:	0.00 €
Total eligible budget:	2,207,353.99 €
Total budget:	2,207,353.99 €

1.4 Project Summary

1.4.1 Please provide a short project summary of the project (press release style):

IsoMicroHydro will develop a portfolio of small-scale micro-hydropower (SMH) solutions designed for rural and isolated regions of the Atlantic Area, to face the challenge of the need more efficient sustained and stable access to green energy in such regions.

The project aims to reduce imbalances between urban/rural regions in terms of access to affordable Renewable Energy Sources (RES) by promoting energetic sovereignty, taking advantage of existing water infrastructure for energetic exploitation.

We'll develop a comprehensive understanding of the micro-hydropower potential and fine tuned technology integrating with RES (including offshore wind and wave sources), energy storage solutions and the grid. Cooperation among the Atlantic European regions will allow the implementation of pilots and solutions addressing distinct specific needs for islands and other isolated areas and provide solutions marketable and useful at a transnational level.

1.5 Project Documents

1.5.1 Partnership agreement

To be provided only if the application is approved

1.5.2 Partnership agreement date

1.5.3 Project start document

To be provided only if the application is approved

1.5.4 Project start document date

1.5.5 Proof of solvability to be provided only by the lead partner (in case of public authority is enough a document justifying the legal status of the entity)

Solvency_DeclarationAndPublic Law Body.zip

1.5.6 Proof of solvability to be provided only by the lead partner (in case of public authority is enough a document justifying the legal status of the entity) date

02/03/2023

1.5.7 Written agreement with countries outside the Interreg AA eligible area

To be provided only if the application is approved

1.5.8 Written agreement with countries outside the Interreg AA eligible area date

2. Project Description

2.1. Project Overall Objective

2.1.1. Please define the overall objective of the project:

IsoMicroHydro will design and provide to rural and isolated Atlantic regions (both On-grid and/or Off-grid) with complementary sources of green and blue energy, aiming for constant energetic supply and the reduction of prices of energy.

The aim is to design and deploy affordable small-scale energy solutions that are easy to replicate and demonstrate how local citizens and communities can take the initiative to develop renewable energy solutions that are not dependent on weather variability.

2.2. Project Relevance and Context

2.2.1. What are the territorial common challenges/opportunities that will be tackled by your project?

The cooperation area is made up, almost entirely, of coastal and near-shore territory with some kind of environmental protection. This presents a challenge between the need to exploit resources and the preservation of protected environments and biodiversity.

Most of the islands that are far from the mainland, as well as other isolated areas, are highly dependent on fossil fuel imports for transports and power generation, leading to high costs of supply as well as several environmental negative impacts. The use of local energy sources can mitigate the fossil fuel consumption and reduce the vulnerability of these regions. Nevertheless, the high intermittency of Renewable Energy Sources (RES) slows the advance of the 100% renewable-based territories. That is why storage systems play a crucial role in the islands and outlying areas' energy transition, enhancing both the renewable energy penetration and the reliability of the electric supply. By storing potential energy in water, we can reduce the need for batteries, a source of difficulties in solar/renewable installations, mainly due to its high cost. The project also aims to use Artificial Intelligence (AI) to optimize between different uses of water and play with storage and other RES.

This project also occupies an important place, regarding the need of development of small scale agricultural areas, eventually managed by vulnerable families, together with the incorporation of renewables increasing self-sufficiency on farms. In this context, this technology pays particular attention to the economic development of rural areas and to the reappraisal of agriculture. This may result in the possibility of growth for family income, reducing energy consumption, and in new approaches to the industry.

2.2.2. How does the project tackle identified challenges and needs and what is new about the approach of your project?

Micro and small scale hydropower have only been introduced once on a previous Interreg project, but not in the Atlantic area focusing on islands and isolated territories. This example of a similar project under Interreg, with the title “Micro-Hydropower Unit for the benefit of Roman Municipality Community”, turned out as a successful example on how this region, with the use of this kind of renewable energy, is now being able to produce its own electricity to cover the consumption of some public services and making economical savings for the municipalities.

The integration of IsoMicroHydro on small islands and isolated land regions aims to diversify the sources of electricity and storage, complementing marine renewables and offshore wind, thus making the overall system more resilient, by absorbing occasional production surpluses due to the intermittency of renewables and returning these surpluses during periods of production shortages. Energy storage sources such as hydrogen or batteries are storage require a high level of investment. Micro and small scale hydropower solutions are a potentially more affordable and technically simpler requiring fewer materials that may be critical in the future. Therefore, this project represents a much more sustainable alternative for the integration of renewable energy for poorer populations than more complex/expensive technical solutions.

IsoMicroHydro fits in the context of the energy renewal taking place in the Atlantic Area with the aim of supporting the design and the construction of new energy infrastructure and proposing best practice examples of how rural communities with energy poverty can transform their fossil fuel-based energy systems into systems based on RES, without being dependent on weather conditions and lack of continuous supply, like the case of wind and solar sources. Ultimately, IsoMicroHydro aims to demonstrate how the integration of micro hydropower can contribute to the reduction of power fluctuations from other RES and reduce the need for battery technologies with the help of storing potential energy as water and also with green hydrogen. This successfully fits the energetic needs/problems of islands and isolated areas, namely the high availability of RES (strongly intermittent) and the difficulty to dispatch their potential overproduction, since there is often no connection to the mainland power grid (in the case of islands). We will design and implement solutions to allow the storage of renewable energy surplus during peak power production and shift availability of renewable energy to maximize the input. For example, when water turbines produce more electricity than needed, electricity surplus can be stored in the form of gravitational potential energy by pumping the water from a lower reservoir to a higher one. Whenever necessary, the stored potential energy is converted again into electricity by means of the hydropower turbines.

2.2.3. Why is transnational cooperation needed to achieve the project objectives and results?

Since the project aims to create solutions addressing rural regions of the Atlantic Area, the need to develop technological solutions that can be fine tuned according to regional contexts demands a transnational approach. Micro hydropower technology solutions have been implemented in existing pilots in Navarra region and Madeira island. We foresee the design of (new/evolved) solutions in Navarra region and Madeira island and also in the Canary Islands, Madeira and Azores Archipelagos, as well as the implementation of small pilots in these same regions, if feasible. Cooperation among stakeholders representing the Atlantic European regions is necessary to develop a technology that will be marketable and useful for all Atlantic regions. The different partners of our consortium have complementary competences, both soft and hard skills, as well as complementary and heterogeneous scenarios for RES exploitation, thus the need to act at different national, regional and local levels, also taking into account different regulatory contexts in each level and country.

The expected change by the end of the project is the establishment of a network of communities that have an increased and sustained supply of green and blue energies, in the above mentioned Atlantic regions and a reduction of energy poverty/literacy in these regions. This network of communities is expected to increase after the end of the project with the development of commercial technological solutions adaptable to the peculiarities of different Atlantic Area rural regions.

2.2.4. Who will benefit from your project outputs and results?

Target Group	Specification
Local public authority	Local public authorities will benefit with the policy recommendations that will come out as an output of our project.
Regional public authority	Regional public authorities will benefit with the policy recommendations that will come out as an output of our project
National public authority	National public authorities will benefit with the policy recommendations that will come out as an output of our project.
Interest groups including NGOs	Irrigators communities, local energy communities and civic groups that deal with socio-environmental issues in general will benefit as well since we aim to provide solutions involved with energy poverty and water scarcity or around the water-energy nexus.
Higher education and research organisations	Specification: both our partners in this category and other entities, especially the ones connected in the network of Digital Innovation Hubs to which ARDITI and UMa belong will benefit from the knowledge produced in this project, both for their teaching as well as research activities and also test before invest services of the DIHs.
SME	As one of the results of the technological advancements and the adoption of new technologies, it is expected that the generation of industry by hydropower rises. This is an ideal market opportunity that many companies, including partners involved in this project, can implement and develop in the long run.
General public	Vulnerable families will benefit in getting a better control of their energy consumption and electricity bills and being able to consume cheaper local renewable energy. Vulnerable families will get an extra focus in this project but efforts will be made to reach the whole rural community that will also benefit. Those benefits will result also in better and cheaper consumption of energy and higher knowledge and awareness of how to organize and improve their lives around energy.

2.2.5. How does the project contribute to wider strategies and policies?

Strategy	Contribution
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<p>The Atlantic Strategy Action Plan</p>	<p>The new action plan proposes concrete actions for developing the blue economy in the Atlantic, addressing challenges such as reducing greenhouse gas emissions and developing renewable energy. The 4 pillars of the Atlantic Action Plan 2.0 address key challenges and aim to foster sustainable blue growth and contribute to greater territorial cooperation and cohesion in the EU Atlantic area, going beyond the offshore wind.</p> <p>IsoMicroHydro, will design use-cases and implement pilot experiments for harnessing hydropower in integration with other RES and supplying energy communities with green/blue energy. Use-cases and pilots will address integration of wave energy and offshore wind, which will directly contribute to the main objective of pillar III, of promoting carbon neutrality through marine renewable energy, namely to the following actions:</p> <ul style="list-style-type: none"> - Implement incentives for deployment of innovative renewable energy installations. - Promote cooperation between different players within EU Atlantic
<p>The EU Green Deal</p>	<p>The European Green Deal aspires to a "climate-neutral bloc" by 2050, with ambitious goals for the energy sector. According to the EC, energy production and use account for over 75% of the EU's greenhouse gas emissions. A lot must be done to decarbonise the EU's energy system to reach the 2030 climate objectives and the long-term strategy of achieving carbon neutrality by 2050.</p> <p>The IsoMicroHydro project, through the implementation of networks of communities supplied with green and blue energy, will tackle the challenges of the EU Green Deal and directly contribute to a secure and affordable EU energy supply, one of the key principles for the clean energy transition, which will help reduce greenhouse gas emissions and enhance citizens' quality of life.</p> <p>Our project contributes to the EU Green Deal's main objectives of building interconnected energy systems and better-integrated grids to support renewable energy sources, empowering consumers, and helping EU regions tackle energy poverty.</p>
<p>The EU Territorial Agenda 2030</p>	<p>The Territorial Agenda seeks to promote an inclusive and sustainable future for all places and to help achieve Sustainable Development Goals in Europe. The Territorial Agenda 2030 defines two overarching objectives, a Just Europe and a Green Europe, which have six priorities for developing the European territory as a whole. The IsoMicroHydro contributes to both of these objectives.</p> <p>The IsoMicroHydro project, through a constant energetic supply and aiming for lower energy prices, especially in rural and isolated communities, will contribute to the creation of better balanced territorial development and tackle the priority Just Europe, but also to reduce the inequality between places and tackle the priority Functional Regions.</p> <p>Under the Green Europe objective, we aim to help tackle the priority of Healthy Environment by helping implement communities supplied with green and blue energy, which may evolve into climate-neutral communities.</p>

Any other strategy(ies)	<p>IsoMicroHydro also contributes to the following strategies:</p> <p>REPowerEU actions: The REPowerEU Plan was presented in response to the hardships and global energy market disruption caused by Russia's invasion of Ukraine. The new geopolitical and energy market realities require the EU to drastically accelerate the clean energy transition and increase Europe's energy independence from unreliable suppliers and volatile fossil fuels. Our project helps to tackle the objectives of producing clean energy and diversifying energy supplies.</p> <p>UN 2030 Agenda - Sustainable Development Goals (SDG): The project's general objective is to secure a constant energetic supply and maintain low energy prices, as well as improve the quality of life by reducing air pollution. This is aligned with the objectives of sustainable development goal 7 "Affordable and Clean Energy".</p>
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2.2.6. How will your project use synergies with EU and other projects or initiatives?

Initiative	Synergy
CYTED REGEDIS Network	Work conducted by LNEG in the CYTED REGEDIS network involved several entities from different countries and included work packages covering wind technology testing, renewable resource assessment, and regulations and policies for the Iberia and South American countries. The actions developed in this network and the acquired experience can be of added value for IsoMicroHydro. https://www.cyted.org/es/regedis .
EERES4WATER	EERES4WATER, specialized in the Energy-Water Nexus, is an INTERREG project that aimed to provide Atlantic Area targeted stakeholders with the tools and instruments needed to overcome the Nexus challenges, by promoting the direct use of renewable energy sources and energy efficiency in the water cycle, influencing related policies and introducing new processes and technologies. CU and PIU were involved in the project and their experience will be highly valuable for this current Consortium.
OffshorePlan project	In the offshore topic, the outputs and methodologies from the national-funded P2020 OffshorePlan project, led by LNEG, will enable to understand the wind and wave resources since the modelling techniques can be replicated for the island's environment. The project also developed a holistic geographic information system planning methodology that can be applied in the IsoMicroHydro project to identify the most adequate locations for the installation of RES. https://offshoreplan.lneg.pt/ .
Project IDEAS	This project creates an innovative building with a RES which will cost effectively exceed current RES efficiencies, generating electricity, heat and cooling, and optimized for multifamily, public and commercial buildings in different climatic conditions. It improves the SoA in integrated PV and thermal solar technologies and coupling with novel thermal energy storage and HP technology. The methodologies used in IDEAS will be very useful for IsoMicroHydro. https://www.horizon2020ideas.eu/
SMILE	The SMILE project (H2020 2016 GA731249) demonstrated smart grid solutions in large-scale smart grid projects in the Orkney, Samsø, and Madeira islands. The pilots tested the operation/distribution grid to implement solutions for demand response, intelligent control, and automation of distribution networks. In Madeira, the pilots studied the integration of Battery Energy Storage Systems for prosumers and at the substation level, as well as the integration of smart-charging for Electric Vehicles.

2.2.7. How does your project build on available knowledge?

Project SmartSolar involved consortium members (UMa and EEM) forecasting the energy production in partnership with an energy SME, based on a network of public weather stations and the energy market and return on investment was analyzed for private investors in different countries and under different scenarios. Experience from this project will be valuable to better understand, model and simulate weather patterns and history that will be relevant to assess the potential and feasibility of the pilots in the different regions.

PhD work at Universidade de Coimbra, supervised by one of the consortium members (UMa) is performing a study for a Full Green Island approach for Porto Santo (Madeira-Portugal). In this work the yearly consumption of energy is being analyzed on an hourly basis and energy production based only on renewable energy is simulated, considering load management at the desalination power plant and the existing Lithium-ion existing battery, together with other energy storage options. Knowledge from this work will be highly relevant for IsoMicroHydro tasks dealing with integration of RES and the grid. Results from this work can be seen, for example, in this publication: "Modeling demand flexibility and energy storage to support increased penetration of renewable energy resources on Porto Santo", R. Torabilaki, D. Lobo, A. Gomes, F. Morgado-Dias, Greenhouse Gases: Science and Technology. 2020.

TRISOLARIS collaborators have been directly involved in the following H2020 projects:

- SU-DG-IWG project aiming to assist the Implementation Plan addressing geothermal energy (IP-DG) which was developed in the frame of the SETPlan TWG/IWG-DG and endorsed by the SET-Plan Steering Group
- GEOTHERMICA with the objective to promote research and innovation in geothermal energy to make geothermal energy reliable, safe, and cost-competitive.

The potential pilot in Azores might consider the integration of geothermal energy.

2.3. Project Partnership

2.3.1. Partnership?

UMa is the lead partner of the project with vast experience in energy related projects and in the use of Artificial Intelligence to model, simulate and dynamically control different scenarios of RES use and integration, also with the Grid. ARDITI has identical experience and is leading Madeira's EDIH - the Smart Islands Hub providing relevant knowledge, input and synergies. ARM will provide facilities of water supply in Madeira island, both for consumption and irrigation, including an already existing micro-hydro pilot.

LNEG has expertise in renewable potential assessment including offshore wind and wave sources and also hybrid systems. TRISOLARIS will be involved with higher contribution in technological activities, and on Azores region contextualization and implementation.

Navarra Government brings experience from an existing pilot in Lizarraga and promoting and communicating energy transition initiatives.

PIU brings its experience on ram pump systems with energy storage and/or different applications with micro-turbining, and will foresee use-cases/pilots in remote regions of Brittany.

LPRC, specialized in hydrogeology and science communication, brings its expertise in leading communication, dissemination and public outreach. EB, in representation of the civil society, will take care of benefiting local communities, also dealing with social justices and barriers.

TCD brings its expertise in research and innovation, and impact measurement and assessment of diverse science and engineering projects, as well as in technology development and commercialisation of research and intellectual property.

Regarding associated partners: EEM will facilitate Grid integration; CRBM represents potential small-scale micro-hydro producers; CU has experience on digital modeling of renewable energy schemes and devices; SG on distributed storage based on hydraulic pumping; AJAMPS will bridge with agricultural farms with potential of exploitation of micro hydro power.

2.4. Long-term effects and durability

2.4.1. Ownership/durability

All partners are fully committed to ensuring the financial and institutional support to guarantee the IsoMicroHydro project outputs and deliverables. A collaborative platform (e.g., Asana, Google Drive, Dropbox, or other free platform to be decided on the project kick-off) will be used amongst partners to ensure that non-public deliverables and results will be always accessible to project partners, including associated partners.

Public project deliverables and outputs will be publicly available in the project website for wide consultation and widely disseminated in the project social media channels. The lead partner will be in charge of keeping these communication channels active after the project lifetime, to ensure the public availability of results.

As the most important deliverables will be provided to their target audiences (e.g., “Policy recommendations and implementation guidelines on renewable MicroHydro solutions”, under WP4, will be directly provided to policy- and decision-makers), we envisage that they will analyze and use these outputs and results to redefine policies and strategies, creating an impact.

During and after the project lifetime, other funding opportunities will also be explored as additional support to further exploit the IsoMicroHydro results and solutions and extend as much as possible their positive effects and durability.

2.4.2. Lasting effects

The territory of the Atlantic Area has made a commitment to Renewables Energy Sources, given its natural qualities and capacity for that. In the last decade, some work has been done on the development of energy production, related both in coastal, with wind farms, and inland areas, with hydroelectric energy. The key elements involved in the development of these capacities, as well as production at affordable prices for citizens and companies, has been technological advance together with the application of innovation.

The energy system of these areas in the Atlantic currently strongly relies on the use of fossil fuel, therefore, the implementation of this project, that focuses on the use of smart power and storage energy systems with this long-term and robust technology, is essential to radically change the growth scheme of the islands and other isolated regions, being this the immediate output of the project, also constituting the basis of a long term result related to the involvement of communities implementing this system.

The long-term outcomes of this demonstration are more climate resilience islands and other isolated regions with a more diverse and stronger local economy, based on sustainable services and products along the water-energy nexus. Public project deliverables and outputs will be publicly available in the project website for wide consultation and widely disseminated in the project social media channels. These communication channels will remain active after the project lifetime to ensure the public availability of results. Specific public deliverables will be provided to the target audiences. For example, “Policy recommendations and implementation guidelines on renewable MicroHydro solutions”, under WP4, will be directly provided to policy- and decision-makers, to ensure that results are received by the target stakeholders.

A collaborative platform will be used amongst partners to ensure that non-public deliverables and results will be available for the project partners.

During and after the project lifetime, other funding opportunities will also be explored as additional support to further develop the IsoMicroHydro results and solutions.

2.4.3. Transferability

It is our expectation that a host of groups, both national and international will benefit from the outputs and deliverables of this project, especially other rural isolated communities that are either in or apart from the grid and small industries. National and regional authorities are directly involved in the project, and will be in charge for the development of the main project outputs with the help of solution providers and facilitators that are also a member of the Consortium. Public stakeholders (civil society and individuals) will be directly engaged locally and on a regional, interregional and national level. The requirements of all stakeholders will be taken into account in a combined effort to address the individual needs of each group to the satisfaction of everyone. The beginning of the project will focus on understanding the requirements and priorities so the outputs will be designed and delivered to meet stakeholder needs. During the final months of the project stakeholder satisfaction will be assessed as a part of the evaluation of the pilots. This will help to anticipate future stakeholder needs of follow-up projects and replication of results.

The organization of workshops with local stakeholders and their representatives (e.g. isolated communities, groups of houses, small industries, isolated farms' owners, public authorities and decision-makers) will contribute to share the project results, increase the awareness of the micro hydro solutions and pave the way to future scaling-up of the renewable MicroHydro solutions.

Some of the important communication actions include a media kit for journalists that will detail the project's technical challenges, citizens engagement processes and expected results and information material that will support the citizens knowledge about the pilots, on the areas where it will be implemented as well as other potential areas from the Atlantic region where partners have representation. Websites, collaborative platforms for project partners and social media will be also set up, informing on project progress.

WorkPlan

Number	Work Package Title	Start date	End date
0	Preparation	14/10/2022	03/03/2023
1	Studies	01/01/2024	30/06/2025
2	Local and regional engagement, Energy Communities and Energy Poverty	01/01/2024	31/12/2026
3	Pilot design and implementation	01/01/2024	30/06/2026
4	Assessment and market creation	01/07/2025	31/12/2026

3. WP nr. 0

Work Package title	Start date	End date	Duration (Months)
Preparation	14/10/2022	03/03/2023	5

3.1. Implementation summary:

This work package has been led initially by La Palma Research Centre and, in a second stage, by University of Madeira. A strong collaboration based on trust and respect has been built.

For making sure all the partners got involved in a specific role, as well as organizing the information required for each activity of the WP, several meetings, using online platforms like Zoom, were necessary. At first, one meeting was established every two weeks, but as the deadline approached and the consortium was involving more and more partners, it was necessary to schedule several meetings every week, especially for solving doubts on how to proceed with the document edition and for administrative assistance. To collect the information on one document of each partner jointly, a Google Drive document was created, shared with all the partners, taking into account the information required by the proposal in the official website. All partners contributed collectively to edit the document with the proposal until it was submitted.

3.2. Project specific objective:

The main objective was the overall coordination of the development of the project proposal, organizing the meetings in which the project idea was jointly developed, the main contributions of the project defined, and the work packages nurtured.

3.3. Communication objective(s) and target audience:

The main objectives for communication of this WP were focused on the exchange of information among all the partners of the consortium. The project coordinator promoted and oversaw communication between all project partners using emails, online collaborative tools (Drive) and virtual meetings (Teams, Zoom). These meetings were online and happened on a predefined schedule, to access the implementation of project tasks, data management, and overall communication.

3.4. Overall description of this Work Package and responsibilities:

The proposal development was initially led by LPRC, defining the proposal idea and building the consortium. On a second stage, UMa committed to coordinate the project (if funded) and took the leadership of the proposal development.

During the progress of the proposal, a strong consortium of organizations have been created. Collaboration among partners has been easy and enjoyable, building trust among partners and establishing a perfect collaborative atmosphere to start a project collaboration.

3. WP nr. 1

Work Package title	Start date	End date	Duration (Months)
Studies	01/01/2024	30/06/2025	18

3.1. Implementation summary:

This Work Package will be led by the University of Madeira (UMa) and will focus on 1) the study of current applicable technologies, 2) the merits of the current implemented prototypes in the participating regions, 3) the needs of those regions and 4) possible integrations between multiple renewable energy sources, energy storage and grid.

The 1st activity will be led by UMa and count with the participation of the partners TRISOLARIS, Pump-Ille-Up (PIU), Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (ARDITI), La Palma Research Centre (LPRC), Trinity College Dublin (TCD), as well as the associated partner Empresa de Electricidade da Madeira (EEM) and will focus on reviewing the literature on Small-scale Micro Hydro power (SHP) to then extract the relevant knowledge to our context unfolding potential solutions and technologies to explore.

The 2nd activity will be led by Navarra Government and have as participants the partners UMa, ARDITI and ARM as well as the associated partner EEM and will aim at gaining insights for the decision-making processes, implementation and evaluation plans for SHP's in the project area.

The 3rd activity will be led by Trinity College Dublin with the participation of the partners TRISOLARIS, UMa, ARDITI, ARM, PIU, Energia Bonita, NG as well as the associated partners EEM, Young Farmers of Madeira and Porto Santo Association (AJAMPS) and Comunidad de Riegos Santa Cruz de La Palma Breñas Mazo (CRBM) and will focus on determining affordable SHP solutions that fit the needs of the communities and other related actors in the pilot areas as well as try to identify existing affordable SHP offerings.

Finally the 4th activity of this WP will be led by Laboratório Nacional de Energia e Geologia and will have as participants the partners UMa, ARDITI, PIU, ARM and TRISOLARIS as well as the associated partners EEM, CRBM and Cardiff University and will focus the potential of variable renewable energy sources (vRES) as wind, wave and solar photovoltaic (PV) to complement the micro hydropower and their combined capabilities to provide the necessary energy while reducing the power fluctuations and the need of (expensive) storage technologies.

3.2. Project specific objective:

Establish the State-of-the-Art of SHP technologies, taking into account implemented pilots and quantifying potential for SHP in participating regions, including the potential integration with other RES, Energy Storage Solutions and the Grid.

3.3. Communication objective(s) and target audience:

The communications for this WP will be focused on different audiences, mainly on researchers and stakeholders interested on this topic, including as well general interests on other renewable energy sources. The information material developed from the studies and communication will also support the citizens' engagement and knowledge co-creation processes across the pilots and will be made publicly available in order to contribute to similar or related projects/initiatives.

3.4. Overall description of this Work Package and responsibilities:

Study, reviews and assessments of current state of art, needs and possible integrations of SHP.

Activity 1

Leader: UMa

Partners: TRISOLARIS, PIU, ARDITI, LPRC, TCD

Ass. Partners: EEM

Activity 2

Leader: NG

Partners: UMa, ARDITI, ARM

Ass. Partners: EEM

Activity 3

Leader: TCD

Partners: TRISOLARIS, UMa, ARDITI, ARM, PIU, EB, NG

Ass. Partners: EEM, CRBM, AJAMPS

Activity 4

Leader: LNEG

Partners: UMa, ARDITI, PIU, TRISOLARIS, ARM

Ass. Partners: EEM, CRBM, CU

3.5. Investments list

3.6. Result Indicators

Result Number	Code	Programme result indicator	Result Description	Result indicator baseline	Result indicator target value
1	RCR79	Joint strategies and action plans taken up by organisations	Pilot design and implementation strategy (taking into account SoA and current prototype assessment)	0.00	1.00
2	RCR104	Solutions taken up or up-scaled by organisations	Description: Use-Cases for SHP implementation, integrated with other RES.	2.00	7.00

3.7. Activities list

3.7.1. Activity nr. 1

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Review current SoA of microhydro technology	01-2024	12-2024

3.7.5. Activity description:

The aim of this activity is to review the literature on SHP, collect and analyze the historical development of SHP knowledge particularly knowledge relevant to our context, deconstruct the relevance of this for our intended work, unfolding thereby the potentials for our specific context. This we also expect will posit new directions and possibilities for the chosen contexts. Activities will focus on reviewing and identifying among other things:

- a) state of the art technologies, including pumps as turbines (PAT), blade designs, pressure drops or flow rates, etc
- b) improvements in hydrological assessment methods and developments in standardized/systemized hydraulic structures, new construction material, flexible turbines for low heads)
- c) cost reduction strategies, especially in very low head schemes,
- d) approaches to minimizing environmental and social impacts,
- e) methods for increasing efficiency and reliability,
- f) Policy and market issues, and
- g) grid integration, also with other renewable energy sources as well as energy storage solutions
- h) providers of technologies, references and associated performances, together with quality attributes and standards.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

State of the Art Report - final report of this task addressing content as described above

3.7.6.2 Deliverable(s) title(s) & description:

Intermediate State of the Art Report - in the end of the first semester a progress report on the current state of this study.

3.7.7. Output Indicators(s)

Code	Description	Target
RCO87	Organisations cooperating across borders	6.00

3.7.1. Activity nr. 2

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Assessment of implemented prototypes in the participating regions	01-2024	12-2024

3.7.5. Activity description:

This activity will focus on the pilots in the project regions with already implemented prototypes/ pilots, aiming to gain insights that will be used to inform decision-making processes and implementation and evaluation plans for SHP's in the project regions. The ultimate success of any SHP prototype and pilot is determined by meeting the specific requirements and objectives of any project. Often this is a function of

- a) What is the efficiency of the plant and technology being used
- b) How much hydroelectric is produced

- c) What is the scale of the chosen plant
- d) What is the scalability of the plant and associated technologies
- e) The social and environmental impacts of the chosen solution

This activity will therefore focus on determining the original needs of the pilot area, establishing the choice and suitability of the technologies used in these implemented prototypes and pilots, and their suitability and appropriateness will be measured against these and other relevant functions yet to be determined.

In this activity the baseline of the energy scenarios, such as hydrogeology, currently used technologies, energy storage, management systems, regulatory framework etc. will be studied. Work will also deal with pre-feasibility analysis, giving us a birds' eye view of the Atlantic pilot areas involved in the project.

A variety of factors for the optimal assessment need to be considered: the detailed description of the rural isolated areas in terms of energy sources, energy possible solutions and current ecological impacts.

The state of the art of the different technologies used in each of the rural isolated areas will be taken into account regarding the generation of the small hydroelectric plants: different models of turbines, vortex system, systems in line with the water current ("flowing type"), as well as other renewable energy sources.

The environmental and administrative context of the four AA regions participating in the project will be assessed. For this reason, different local ecological and administrative actors should be consulted to learn about the concerns of the different entities regarding the biodiversity of the rivers and the possible ecological impact.

The current European regulation of the Renewable Energy Directive (RED II) 2018/2001 and the Electricity Directive 2019 (2019/94) and its transposition in each territory will be analyzed and compared in order to identify best practices.

Each territory's goals, scope and project horizons should be identified, as well as the strengths, barriers and possible solutions.

A MicroHydro experience in its first phase of implementation in one of the four territories should be highlighted and will serve as inspiration to other territories. The microgrid in the municipality of Lizarraga (Navarra) generates, stores and consumes its own energy for the local municipality facilities. Lizarraga generates its own energy beyond the solar panel facility and a small turbine generates electricity using the level difference between two water reservoirs. This place is attractive for this AA project because it has a Microgrid facility that integrates photovoltaic and hydroelectric renewable sources.

The specific case of the microgrid of Lizarraga (Navarra), a village of 200 inhabitants, can be inspiring in its initial part to all partners.

Making a virtue of necessity and taking advantage of its strong points – in this case, the slope, its communal land and a community that works exemplarily, an empty water tank and the pipes that cross the subsoil of the town Lizarraga became a treasure of sustainable energy management. A practical case study developed a hydraulic energy storage technology, a pumping system distributed in a closed circuit that is unparalleled neither in Spain nor at a European level, meaning that the model can be replicable.

The mini-hydraulic system is made up of two parts: a turbine that produces electricity through the waterfall and a pump that is fed by the electrical energy generated by the PV installation and enables the previously turbinated water to rise so that it can be stored again at a higher rate. It is a valued energy management system, because it allows to storage and the electricity can be used anytime it is needed.

Two different local energy combined resources allow the integration of the energy on a microgrid.

-Bottlenecks and possible monitorization, digitalization and renewable solutions

In the case of Lizarraga microgrid, even though the experience has been mostly successful, there some boundaries to overcome:

-Energy self-consumption is currently up to 70% of the Council facilities but it is desirable to be increased to all consumers in the village. Therefore, energy generation and energy efficiency should be increased.

-Although the Council is the owner of the infrastructure, the local council has no capacity to maintain it because of a lack of resources or financing for adequate energy management software and the plans of the infrastructure. The enterprise which developed the infrastructure is in charge of the maintenance, but the council is not able to afford its costs.

On the one hand, this real case study will be the base of new studies for learning the technical benefits of hydrogeology, currently used technologies, storage, management systems, etc. Current regulatory framework will also be studied and energy efficiency studies will be carried out by collecting data with the latest technologies that can be compared with the other pilot regions in order to improve the implemented renewable energy system.

On the other hand, a new plan for a second phase of improvement of the facilities and management of the microgrid of Lizarraga should be nourished by the knowledge shared by the partners of the other three regions. The Public regional administration would be able to replicate this model in other municipalities in a cheaper and easier

way.

The new renewable energy system will be optimized as much as possible to reduce greenhouse gas emissions and a roadmap will be drawn up for implementation in other regions.

This study will also take into account the future problems that may occur due to the dependence and maintenance of this renewable energy network, trying to ensure that the solution is also a sustainable solution.

The strong technical capacity of the technological partners of the consortium will guarantee a comprehensive assessment of the current pilots which will allow for an informed design of first pilots in some regions and evolution of the current pilots.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

Study Report of current microhydro implementations in the isolated areas of the involved regions addressing all points described above.

3.7.6.2 Deliverable(s) title(s) & description:

Intermediate Report of current implementations - in the end of the first semester a progress report on the current state of this study.

3.7.7. Output Indicators(s)

Code	Description	Target
RCO87	Organisations cooperating across borders	5.00

3.7.1. Activity nr. 3

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Study of the needs and the microhydro potential of the pilot areas	01-2024	06-2025

3.7.5. Activity description:

This activity will focus on determining the needs of communities and other related actors for affordable SHP solutions in the potential pilot areas. Secondly, it will identify the potential of affordable SHP offerings in these areas.

Needs Assessment

Building upon the knowledge gained in assessing current implemented prototypes and their outputs, and also the SoA study this activity will be based on ethnographic and participatory action research approaches employing a combination of data collection methods including interviews, surveys, document analysis and innovative methods like visioning and back casting and design thinking methodologies. A bottom-up approach of involving key stakeholders from the beginning of the project will seek to ensure local ownership of inputs, outputs, outcomes and the envisaged changes that this project intends to achieve.

Initial research carried out by the team in one of the main sites, La Palma evidences:

- Firstly, an existing, albeit aging irrigation network infrastructure comprising of wells, reservoirs, pipelines, tunnels, pressure reducers, pumping stations etc
- A host of diverse actors involved in a 'water industry' primarily set up to feed the banana growing industry which comprises of water communities that own the rights to water, a community of irrigators who are both responsible for and maintain irrigations networks, and a water council functioning as administrators and regulators for this sector.
- There are also associated actors in the sector that function in varying capacities like engineers and project managers.

These extremely complicated systems would require detailed study to be able to not only provide empirical

information for a stakeholder mapping output, but to also be able to engage with them as key informants in understanding the needs of all relevant stakeholders and the potential of affordable small-scale energy solutions. To this end, the envisaged research for this activity of WP1 will employ an exploratory approach involving the following phases:

1. Identifying Key stakeholders of this ecosystem:

This initial step will build upon the laid foundation and deepen its search and complete its list of key stakeholders, who it sees as key informants and actors throughout this process. A major output of this activity which will involve talking to members of water communities will lead to a digital map of key stakeholders who will be invited to participate in the needs assessment process

2. An outreach phase:

It will require time and visits to the localities where key stakeholders can be accessed. It is an opportunity for the target population to get to know about the project and to meet local and international staff and future facilitators of the research methodologies to be employed. This stage of the process will explore practical ways to motivate and encourage members of the target group to participate in consequent activities that will inform the project and help it develop solutions that address community needs and that can bring about change in community living.

3. Development of assessment tools and instruments. The project will use a mixed methods approach to assess needs. The collection of data and consequent generation of this knowledge would involve the following methods:

- a. Surveys
- b. Interviews
- c. Focus Group Discussions
- d. Analysis of relevant documents

4. The training and research preparation stage is aimed at building an adequate team and training them in the tools to carry out an extensive needs assessment. Given the use of digital technology in this process, there will be the need for some training to ensure effective utilization of these technologies to safeguard appropriate data collection for later use in generating the intended outputs.

5. Carrying out of the research. This comprises of meeting with key informants and collecting and collating the necessary information for a detailed needs assessment.

6. Data transcription and storage: The studies will collect audio and/or video data (e.g. recordings of interviews, focus groups or talk in consultation), and these will be transcribed into written form for closer study.

7. Development of assessment report. This phase would involve writing a report that presents the final evaluation of the data collected to inform on results of the needs assessment. Employing a 'Development Account' approach—an approach developed as a mechanism for conducting assessments needed for decision making to fund development projects. This report is intended to be a supportive vehicle for advancing the implementation of internationally acceptable pilots that consider sustainable development goals by building capacity at three levels: individual, organizational and enabling environment. It is aimed at achieving inclusive and sustained economic growth, poverty eradication, and sustainable development.

Potential

A rough estimate of the power available at a specific micro-scale site can be calculated from the following equation:

$$\text{Power (kW)} = 6 \times \text{head (m)} \times \text{flow (m}^3/\text{sec)}$$

Head = the vertical flow of the water, essential for hydropower generation.

Flow = volume of water passing per second.

To determine and assess the potential of SHP in the project regions, activities will focus on the following:

a. Determine the Head and the potential of SHP

The volume of the water flow and the change in elevation—or fall, and often referred to as head—from one point to another determine the amount of available energy in moving water. In general, the greater the water flow and the higher the head, the more electricity a hydropower plant can produce. The project team will choose a cross-section of areas and provide relevant information

- i. Using a topographic map.
- ii. If there is a water pipe already installed, measure the static pressure with a pressure gauge, and/or
- iii. use altimeters, dumpy levels and other surveying type of equipment.

The potential of SHP will be computed using state of the art technologies to discretize the basin into sub-areas and add together the maximum hydropower potential of each sub-area, which is a function of: the sub-area extension, the precipitation, the run-off coefficient and the elevation difference between the maximum elevation and the lowest. A 'potential' map using GIS will be consequently developed.

As for the micro grid of Lizarraga in Navarra, the production, performance and the existing energy consumption will be analyzed.

Various energy management systems will also be considered to develop an improved and extended tailored project for the village.

We will identify an affordability index of Micro Hydro power by communities in selected regions: The affordability index is a measure of a population's ability to afford to purchase a given good- in this case the power generated by the SHP's. This is also a factor determining the potential of SHP's in the selected region. It would also feed into the Needs Assessment Report

Finally, we will create and run Artificial Intelligence Models, which will be the basis to forecast the energy production, determine the type of RES to place in each location and determine the need for storage based on the forecasts of consumption, generation, curtailment and integration with other resources.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

1. Needs assessment report of communities and other relevant actors for affordable SHP solutions in the selected pilot areas - to determine the needs of communities and other relevant actors in the selected regions, they will have to first be identified and a list of relevant actors and corresponding contact persons, for a needs assessment, would have to be created.

2. Assessment report of potential of SHP in the participating regions - using a predefined criterion for selection (yet to be developed), the project team will identify firstly the probable location and site for SHP pilots. Secondly, using the described approaches above, the potential in terms of hydro power generation and associated systems and components of a SHP will be determined and mapped to the regions.

3.7.6.2 Deliverable(s) title(s) & description:

Exploratory processes and deliverables as discussed under above headings.

3.7.7. Output Indicators(s)

Code	Description	Target
RCO81	Participations in joint actions across borders	2.00
RCO83	Strategies and action plans jointly developed	1.00
RCO87	Organisations cooperating across borders	11.00

3.7.1. Activity nr. 4

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Review and assessment of integration with other Renewable Energy Sources and Energy Storage Solutions	01-2024	06-2025

3.7.5. Activity description:

Hydroelectric power plants for example with accumulation reservoirs offer incomparable operational flexibility, since they can immediately respond to fluctuations in the demand for electricity. The flexibility and storage capacity of hydroelectric power plants make them more efficient and economical in supporting the use of variable sources of renewable energy, such as solar energy. Combining the use of hydroelectric power with other sources of energy also holds huge potential in addressing the provision of affordable electric power solutions.

These and other potentials for integration and storage will be explored over the project's life cycle. For example, ram pumps can pump water constantly. The same amount of water can be pumped in the day with less electricity. Less electricity will be used or none, depending on the amount of water pumped and depending on the size of the ram pump and the water available (to feed the ram pump). Ram pumps can also store water in a higher level (in a reservoir) which can flow through a turbine in the night or in the day, when more energy is required.

This activity therefore focuses on the potential of variable Renewable Energy Sources (vRES) as wind, solar photovoltaic (PV) and wave to complement the micro hydropower and their combined capabilities to provide the necessary energy while reducing the power fluctuations and the need of (expensive) storage technologies. To support the activity, a literature review of existing solutions will be performed at a first stage. Concepts as renewable hybrid power systems/plants that explore the local complementarity of different renewable sources at different temporal scales will be also scrutinized. In addition, and in order to identify the overall potential of the areas of interest, an evaluation of the offshore wind and wave energy potential integration in the proposed solutions will also be studied. The wind resource assessment in islands will necessarily need to account for the transitions "sea to land" of the wind flow. In this sense, the Consortium will also evaluate the offshore wind resource as a potential complementarity to the proposed solutions. Also, and although Wave Energy technologies are in a maturity stage far from wind technologies, and still not very competitive, its potential will also be evaluated in order to be prepared for future integration in the solutions developed under this project. Thus, local complementarity of renewable energy sources through individual solutions or integrated applications (for instance installation of wave technology and/or solar power in the structure of a wind turbine) will be explored and analyzed aiming to explore the inherent characteristics of each technology's primary resource.

vRES such as wind, wave and solar PV take advantage of local nature's endogenous resources to generate an alternative that does not leave residues or consume the planet's non-renewable resources. In addition, vRES technologies nowadays present competitive installation costs in relation to conventional fossil fuel-based technologies especially for small-scale/isolated systems. Despite the expected benefits of vRES, these technologies are weather-dependent, and their variability brings additional challenges in their integration in the power or isolated systems.

Understanding and characterizing vRES resources can enable a better integration of these technologies in sustainable solutions for isolated/remote regions. Indeed, it can be assumed that the ideal solution is the one in which the total generation is not the effective sum of the installed capacities of each technology. Therefore, each solution must present a good complementarity between the different technologies installed in different time scales (hourly, daily, monthly and annually) so that it presents, the following benefits: i) a combined vRES generation that is as stable as possible; and ii) a reduction of low vRES contribution. Although expensive, the use of flexibility solutions such as battery storage technologies or sector coupling can also enable to mitigate some of the vRES variability, as well as the possibility of injecting energy surplus on the grid.

As a final result of this activity and WP, a set of an initial specification of use cases for each place/pilot will be developed.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

Requirements specifications for a digital tool to help designing and optimizing the matching between a region and available technologies.

This will be a Decision Support System for Energy Policy makers at the technical and Political level.

The objective is to develop a decision-making tool to determine, according to the different regional meteorological scenarios, which installation is the most appropriate to meet the needs of the population, in other words which RES to develop and how to size the production and storage facilities.

This tool will require working on the weather data and geolocations to preview potential energy production and storage. It will also be possible to preview curtailment situations and use them to size the storage alternatives.

3.7.6.2 Deliverable(s) title(s) & description:

Report on MicroHydro integration with other Renewable Energy Sources and Energy Storage Solutions

This deliverable reports solutions based on renewable energy sources and energy storage solutions to supply the energy needed in island or isolated regions. A literature review will be presented focusing on the benefits and barriers of renewable energy sources and their integration with micro-hydro solutions. Energy storage solutions as a flexibility option to deal with the variability of renewable power sources will also be addressed. This deliverable will also analyze the different concepts of renewable hybrid power systems/plants and technical solutions that enhance the benefits of combining multiple renewable power sources. The work conducted in this activity will be based on data collected from other activities. When data are not available the most adequate model and public databases will be used to feed the model and simulate different scenarios.

3.7.7. Output Indicators(s)

Code	Description	Target
RCO87	Organisations cooperating across borders	9.00
RCO116	Jointly developed solutions	1.00

3. WP nr. 2

Work Package title	Start date	End date	Duration (Months)
Local and regional engagement, Energy Communities and Energy Poverty	01/01/2024	31/12/2026	36

3.1. Implementation summary:

This WP has the transversal goal of educating, empowering and benefiting the local community regarding renewable energy integration in isolated areas, micro hydropower and energy communities, as well as learning from other projects and territories in order to accelerate the local energy transition process. It also has the important goal of understanding the energy poverty situation in the area and integrating a group of vulnerable families into an energy community producing and consuming renewable energy.

There will be a first activity for networking and transferring knowledge among previous initiatives related to renewable energy integration in isolated areas and micro hydropower, in order to accelerate the implementation of this project. A parallel activity will tackle the area of energy poverty, being an important focus of this WP and an urgent socioeconomic problem in many European countries. Just as an example, a recent study about Energy Poverty in La Palma showed the dramatic situation many families are experiencing. More than 16% of the population couldn't pay their energy bills regularly in spring 2022 (before the high increase of energy prices which can point to an even higher number by now). In Navarra the energy consumer vulnerability is of 7% and increasing. Another relevant information that the La Palma study discovered was that about 28% of the population is not able to maintain an adequate temperature at home. In the case of Portugal those percentages are slightly higher, where 17.5 % are unable to maintain their properties adequately warm during the Winter (Eurostat, 2022a). Public social services and organizations of the third sector are doing a great job but they lack coordination. They are dealing with many families and solving their emergency situations which often results in them not investing the time for prevention (for example they pay for their energy bills without giving a much needed basic education on how to lower them). The study suggests solutions that focus on avoiding the problem in the first place instead of having to solve them once it is already too late for the families suffering it, by mentoring the vulnerable families in energy literacy at the same time as providing affordable renewable energy schemes in which they can easily participate. Thus, following the recommendations of the mentioned study, this WP will deal with a first mapping of the situation for all participant territories and a plan to coordinate all actors working with energy poverty in the area. All that in order to prepare to work with selected vulnerable families for a pilot in the subsequent WP working with implementation pilots.

The third focus of this WP is with energy communities. An energy community as mentioned here fits the definition of the Renewable Energy Community found in the European Directive (EU) 2018/2001, which is a legal entity based on open and voluntary participation, autonomous, and effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity, and that the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits. The activities of this WP will educate the local population about what an energy community is and what benefits can bring to the energy transition. The upscaling of the development of energy communities can favor the inclusion of energy vulnerable people. The supportive role of the councils in these communities is crucial to enhance the processes and take favorable measures for the vulnerable population.

Finally, an important part of communication will be held in order to educate in the benefits of renewable energy to the general local population.

3.2. Project specific objective:

Increasing understanding of the energy poverty situation in all participating territories and creating collaboration spaces among actors working with the problem while also increasing local knowledge about renewable energies and energy communities.

3.3. Communication objective(s) and target audience:

The main objective for the communication of this WP is to ensure effective dissemination of achievements and benefits of renewable energy, specially inside areas dealing with energy poverty and isolated regions. That is why the main target focuses mainly in energy communities, public social services or organizations and the general public, with special attention on those families struggling with energy bills.

3.4. Overall description of this Work Package and responsibilities:

Networking and communication activities regarding energy poverty, energy communities and renewables solutions in the participating areas.

Activity 1

Leader: LPRC

Partners: TRISOLARIS, UMa, ARDITI, EB, ARM

Ass. Partners: CU, AJAMPS

Activity 2

Leader: EB

Partners: all partners

Ass. Partners: AJAMPS

Activity 3

Leader: EB

Partners: TRISOLARIS, NG

Ass. Partners: EEM, CRBM, AJAMPS

Activity 4

Leader: EB

Partners: all partners

Ass. Partners: CRBM

3.5. Investments list

3.6. Result Indicators

Result Number	Code	Programme result indicator	Result Description	Result indicator baseline	Result indicator target value
1	RCR79	Joint strategies and action plans taken up by organisations	Local and regional engagement plan and Energy Communities promotion and Energy Poverty alleviation strategies.	0.00	1.00

3.7. Activities list

3.7.1. Activity nr. 1

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Networking with other projects and initiatives on integration of renewable energy in isolated areas	01-2024	12-2026

3.7.5. Activity description:

Networking activities will target water stakeholders and municipalities that could be interested in the uptake of project results. Particular attention will be given to clustering possibilities with projects funded under the same call for proposals targeting the same priority (2. Blue/Green Environment) and specific objectives (promoting energy efficiency and reducing greenhouse gas emissions). The networking will consider the co-organisation of workshops, invitations to field visits (to the different pilots) and cooperation in joint communication activities. This will create a system where experts and other stakeholders from across Europe engage directly with each other to shorten implementation activities.

Other benefits of networking include:

Encouragement of connections with communities working on similar topics and challenges

Augmented project visibility

Contribution to the exploitation potential of results.

Networking activities will be implemented from the first year as: a) by-monthly Networking Days with new stakeholders (online; coupled with physical events when possible); and b) clustering workshops connected with project meetings and events.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

Networking activities plan

Networking activities will be carried out around renewable energy in isolated areas, both bi-monthly networking days and clustering workshops.

3.7.6.2 Deliverable(s) title(s) & description:

Networking Plan

The Networking Plan will be developed in two stages (Draft and Final) and will consider extending the geographical scope to cover all Atlantic regions and providing additional services to members.

3.7.7. Output Indicators(s)

Code	Description	Target
RCO81	Participations in joint actions across borders	5.00
RCO87	Organisations cooperating across borders	15.00

3.7.1. Activity nr. 2

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Involving Social actors to reduce energy poverty	01-2024	12-2026

3.7.5. Activity description:

This activity will initiate with the creation of a first repository of energy poverty data available in each territory, in order to map and assess the starting point and energy poverty context. This task will first look at widely accessible data, correlating variables such as average household income or grid topology as an indicator of energy poverty. This research will iteratively focus on specific regions incorporating relevant local actors in the discussion. As a following step, local actors working with the energy poverty topic, both public administration and the third sector, will be identified and contacted in order to interact and cooperate in a common discussion board, as a cornerstone of further work in other activities of this proposal. The result of these first two steps will be a characterization of energy poverty in each territory.

It is expected that for some indicators, such as income, there should be broad similarities between regions, but others related to the infrastructure should be local to each pilot for energy consumption measurement as per WP3. Afterwards, it is crucial to engage with the affected communities to understand the issues they are facing and validate possible solutions that might emerge during the project period. This communication must then be bi-directional and continuous, since part of the assessment of the project activities will focus on the social impact. Furthermore, even more technical activities (and their assessment) will need the cooperation of social actors, to for example access existing infrastructure. A final workshop will take place with all territories in order to share experiences and transfer good practices. There will be follow-up meetings for the length of the whole project in order to evaluate the impact of the activities to the target vulnerable families and to the rest of society and actors involved.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

Collaboration plan to tackle energy poverty
Discussion boards will be arranged in every participating territory with all local actors involved in energy poverty issues (public and private entities). These boards will meet periodically during the whole project, from evaluating the initial situation to the impacts that the project will have.

Workshop between territories to transfer knowledge and lessons learned.

3.7.6.2 Deliverable(s) title(s) & description:

Report of energy poverty situation and joint efforts to solve it
This deliverable reports a base situation of energy poverty in all territories and describes the steps taken to coordinate efforts to tackle the problem, together with other relevant local actors. Also identification of vulnerable families to participate in the pilots of energy measurements and RES possible input in the context of Energy Communities formation.

3.7.7. Output Indicators(s)

Code	Description	Target
RCO83	Strategies and action plans jointly developed	1.00
RCO87	Organisations cooperating across borders	15.00

3.7.1. Activity nr. 3

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Engagement with local stakeholder groups and energy communities	04-2024	12-2026

3.7.5. Activity description:

Workshops will be held to interested local stakeholders in order to explain what an energy community is and what benefits they bring to the energy transition. It will be crucial to bring to the surface the particular needs of producer actors, especially water management entities, as well as the specificities of potential isolated consumers and electricity markets in these regions. Identifying barriers, strengths and commonalities between stakeholders will be a key objective of these participatory workshops.

Energy communities, or in its absence, other types of organized consumers, can consume renewable energy from their own installations or in collaboration with other producers. In the latter case, agreements will have to be created between producers and consumers. Exploration of possibilities adapted to each pilot case will be investigated in this activity.

Training will be offered on technical legal and governance aspects for the setting up or development of Energy Communities. Capacity building of stakeholders (consumers and producers) is essential to understand the complex system and legislation of the water and energy sectors. Removing uncertainties, providing transparent information and forming joint and local working groups can help the development and implementation of this technology around these collective entities.

Awareness raising activities will be held locally in isolated areas to explain the benefits of renewable community energy, specifically the microhydro resources if applicable in the area. Energy communities best practices will be shared in order to engage different possible actors, Local Entities, SME, services and citizenship.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

Engagement plan

Workshops will take place in all participating territories in order to increase knowledge about energy communities, with focus in remote areas and their special needs.

3.7.6.2 Deliverable(s) title(s) & description:

Energy Communities report

This deliverable reports the work and results achieved to reach local stakeholders and their understanding of what an energy community is. It will also describe collaboration among local stakeholders in order to lay the foundation stone to be able to consume local renewable energy.

3.7.7. Output Indicators(s)

Code	Description	Target
RCO87	Organisations cooperating across borders	6.00

3.7.1. Activity nr. 4

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Raising public awareness on renewables solutions in atlantic isolated areas	07-2024	12-2026

3.7.5. Activity description:

Public awareness is the initial step and also a very crucial one in making the sustainable energy program, involving renewables solutions, successful. This will be carried out on a series of actions through the media and by public and/or professional organizations. This step will also include environmental education, implemented as part of the informational output on energy utilization and renewable energy. Any approach which does not have an integral education or training is likely to fail, that is why this can be considered as the significant prerequisite for a sustainable energy program, especially having in count the characteristics of these isolated areas, where access to information through activities and communication is much more limited and less likely to be known, usually with little or no information available for the public.

A key goal is to explain to the IsoMicroHydro stakeholders and general public the potential beneficial role that citizens themselves can play in the involvement and benefiting from the self supply of renewable and more sustainable energy options. This will be mainly achieved by the mobilization of the project's technical network, consisting of several hydrological surveys actively involved in this type of communication. Initial communications will be developed by a small core group and will follow a similar pattern in approaching regional structures in each of the countries that are represented in IsoMicroHydro. It will also include a small introductory workshop/information day in every region where the project is represented, where it explains the objectives of the project to regional representatives and the general public.

This activity will also provide templates, guidelines and a logo for the project partners and third parties to use in communication activities. Social media will also be extensively used in communicating project messages, as these platforms are equally efficient in reaching both the professional community and the public/citizens.

Communications will encompass news feed for the social media network and the website, press-releases, production of media kits, copies for the regional authorities, national journals and the publication, some activities including awareness days on renewable solutions, energy efficiency, self-consumption, hydropower generation, microgrids, energy poverty and Energy Communities, those activities being held for the general public and specifically in the isolated areas that participate in this proposal with pilot cases, and dissemination of key central documents, that will be available for download from the project web site.

Awareness days on renewable solutions, energy efficiency, self-consumption, hydropower generation, microgrids, energy poverty and Energy Communities will be held for the general public and specifically in the isolated areas that participate in this proposal with pilot cases.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

Public awareness and communication plan

Public awareness days will be organized in all territories and a communication strategy will be produced with the goal of reaching the general public.

3.7.6.2 Deliverable(s) title(s) & description:

Public awareness report

This deliverable will report about the public awareness activities results.

3.7.7. Output Indicators(s)

Code	Description	Target
RCO83	Strategies and action plans jointly developed	2.00
RCO87	Organisations cooperating across borders	15.00

3. WP nr. 3

Work Package title	Start date	End date	Duration (Months)
Pilot design and implementation	01/01/2024	30/06/2026	30

3.1. Implementation summary:

This Work Package will be led by University of Madeira (UMa) and will focus on 1) the management of legal requirements and risk assessment, 2) a detailed use-case specification, 3) the development of technical solutions for the pilots and 4) their implementation.

The first activity will be led by Trinity College Dublin (TCD) and will count with the participation of the partners UMa, Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (ARDITI), TRISOLARIS, Navarra Government (NG) and Pump-Ille-Up (PIU) as well as the associated partners Comunidad de Riegos Santa Cruz de La Palma Breñas Mazo (CRBM) and Empresa de Eletricidade da Madeira (EEM) and will focus on management of legal requirements and risk assessment of each region, ensuring an adequate implementation of the designed pilots.

The second will be led by UMa and will count with the participation of all partners as well as the associated partners EEM and Young Farmers of Madeira and Porto Santo Association (AJAMPS) and will focus on the definition of the general characteristics and conceptual design of the potential pilots in the different regions.

The third activity will also be led by UMa and have as participating partners ARDITI, TRISOLARIS, PIU, Laboratório Nacional de Energia e Geologia (LNEG), NG, ARDITI, Águas e Resíduos da Madeira (ARM) as well as associated partners Cardiff University (CU) and will focus on the design and definition of the most appropriate technical solutions for the pilots deemed as relevant and feasible in the different regions of the Atlantic area involved in this project.

The fourth and final activity will also be led by UMa and count with the participation of all partners in the effort of implementing the designed pilots.

3.2. Project specific objective:

To design, develop and implement micro-hydroelectric installations pilots, possibly integrated with other RES and storage solutions, to demonstrate the viability and operation of these systems with multiple benefits for isolated communities.

3.3. Communication objective(s) and target audience:

The main objective for communication on this WP is to inform stakeholders about the project outputs and results as well as seeking synergies with related projects.

The main target audience are water communities, irrigation organisations, rural tourism and service activities, small isolated agri-food industries, local companies, water and energy departments of public administration and companies related to energy market, technology products, water management and local engineering and consultancy.

3.4. Overall description of this Work Package and responsibilities:

Managing legal requirements, risk assessment, use-case specification, development of technical solutions for the pilots and implementation.

Activity 1

Leader: TCD

Partners: UMa, ARDITI, TRISOLARIS, NG, PIU

Ass. Partners: EEM, CRBM

Activity 2

Leader: UMa

Partners: all partners

Ass. Partners: EEM, AJAMPS

Activity 3

Leader: UMa

Partners: ARDITI, TRISOLARIS, PIU, LNEG, NG, ARDITI, ARM

Ass. Partners: CU

Activity 4

Leader: UMa

Partners: all partners

3.5. Investments list

3.5.1. Investment nr. 1

3.5.2. Title:

Artificial Intelligence Server

3.5.3. Justification

3.5.3.1. Please provide a description of the investment and explain to which pilot action it contributes and why it is needed:

The Artificial Intelligence server is a rack assembled device that will enable creating and running the Artificial Intelligence Models. It is a high throughput device that can be used to run the AI based models that require heavy computation. The models that will be created during the project will be the basis to forecast the energy production, determine the type of RES to place in each location and determine the need for storage based on the forecasts of consumption, generation, curtailment and integration with other resources. It will contribute to all pilot actions, creating models for all the pilot sites.

3.5.3.2. Please describe the transnational relevance of the investment. Please clarify how the pilot investment can be replicated and upscale, and how the experience coming from it will be used for the benefit of the programme area:

This investment will be used to support all the pilots and to analyze the models for the different regions so it will be strongly transnational relevant. It will continue to be used after the project finishes and together with the digital tool developed to support decisions regarding RES, it can foster the installation of more RES plants in other locations.

3.5.3.3. Please describe who is benefiting (e.g. partners, regions, target groups, etc.) from this investment, and in what way:

The benefits will be mostly for the involved regions in the first stage as this investment will support the analysis of local data regarding the installation of RES. On a second stage the same analysis and the tools developed can be extended to any other region interested and willing to install more RES.

3.5.4. Location of the Investment (Please describe, if possible, a specific address where the investment will be located)

3.5.4.1. Country

Portugal

3.5.4.2. NUTS II

Região Autónoma da Madeira

3.5.4.3. NUTS III

Região Autónoma da Madeira

3.5.4.4. Address

ARDITI Edif. Madeira Tecnopolo, Piso 2 - Caminho da Penteada

3.5.4.5. Postal code

9020-105 Funchal

3.5.5. Environmental sustainability and risks associated to the investment

3.5.5.1. Please specify possible positive or negative environmental effects related to the investment. In case of environmental risks, please describe the mitigation and monitoring measures foreseen. For example, pilots related to methane emissions must rely on measurement, reporting and verification, controlling for particulate matter, namely PM2.5 and PM10 and NOx, and nitrogen oxides (NOx), proving this information to the Programme during the implementation of the project. For investments in infrastructure with an expected lifespan of at least five years, please describe the expected impacts of climate change and how their assessment and climate proofing will be ensured. Please describe other risks associated with the investment, go/no-go decisions, etc. (if any). Please confirm that the investment does not significantly harm the DNSH Climate and Environmental objectives set by the Taxonomy Regulation (EU) 2020/852. Recall that the programme welcomes the use of green public procurement, nature-based solutions, lifecycle costing criteria, etc., as stated in the Programme Manual. An ad-hoc declaration will have to be provided by each concerned partner in the pre-contracting phase.

There are no risks associated.

3.5.6. Technical and legal requirements

3.5.6.1 Please indicate the technical and legal requirements associated with the investment. If applicable, inform on permissions (e.g. building permits) required for the investment according to the respective national legislation and if these are already available.

**The device will be installed in a rack, already available at ARDITI.
There are no legal requirements.**

3.5.7. Ownership

3.5.7.1. Please indicate which project partner is in charge of the investment. Please also specify who owns the site where the investment is located

UMa will be in charge of the investment. ARDITI owns the site of installation and shares with UMa the same building (owned by the regional government of Madeira), as well as different infra-structure/equipment of projects where they work together as partners.

3.5.7.2 Who will retain ownership of the investment after the end of the project? Who will take care of the maintenance of the investment? How will this be done?

UMa will retain the ownership of the investment. There are no specific needs for maintenance but UMa together with ARDITI will take care of the maintenance.

3.5.7.3. If this is an infrastructure investment, will it be exploited commercially and/or its use will not be publicly available for free?

N/A

3.5.1. Investment nr. 2

3.5.2. Title:

Ram pump system

3.5.3. Justification

3.5.3.1. Please provide a description of the investment and explain to which pilot action it contributes and why it is needed:

A test rig will be built to test specifically a ram pump system and its core component in order to work on increasing its efficiency. It will be developed for the WP3 as a pilot micro-hydroelectric installation in, at least, one of the regions, selected in accordance with the studies to be realized in WP1.

A ramp pump enables to pump water without any electricity or fuel. A ram pump is a technology known from the XVIII century that has never been fully explored and improved. It works thanks to kinetic energy from the moving of the water. It needs to get a small fall with water entering into a delivery pipe and then the pump. As the water closes suddenly a valve, a water hammer occurs. It pressurizes the water and opens a new valve into a small reservoir which already contains air and water (it is a pressurized chamber). The pressure in the air chamber brings the water going out through the delivery pipe, which is driving the water in a higher tank than the fall. Generally, a ramp pump can bring water up to more than 100m, within a fall up to 10m, and between 80 and 90% of the water is released into the river. Just between 10 to 20% can be elevated higher than the fall.

This simple technology is low tech and can be improved and updated to today's requirements. Everybody can make and use its own ramp pump.

3.5.3.2. Please describe the transnational relevance of the investment. Please clarify how the pilot investment can be replicated and upscale, and how the experience coming from it will be used for the benefit of the programme area:

The aim is to analyze the current situation of each region involved in the project where a ram pump may be useful (for irrigation, water services, energy storage, etc.). A multidisciplinary team, with field experience and awareness of different realities, is needed to collaborate on the ramp pump revamp and improvement to the current requirements. Our project consortium has the perfect mix of knowledge and competencies, with theoretical and practical experiences, to work on the improvement of this technology, making it an important asset for regions contributing to a climate-neutral Europe, especially in the Atlantic regions where water can be found abundantly. After the improvement of the ramp pump, we will be testing it in real conditions.

3.5.3.3. Please describe who is benefiting (e.g. partners, regions, target groups, etc.) from this investment, and in what way:

There is a vast array of beneficiaries for the improvement of ramp pumps, as it can be used for irrigation, pumping water, water management or energy storage, in agriculture and even in particular houses.

Regarding professional users, water and energy departments of public administration and companies related to the energy market, technology products, and water management are among the main beneficiaries of this technology. Our project to revamp and improve the ramp pump will allow these agents to save essential resources like energy, water, and money, while reducing CO2 emissions. These savings ought to translate not only into lower energy prices for the consumers, but also contribute to a climate-neutral Europe, complying with the EU Green Deal objectives and REPowerEU actions.

The beneficiaries of this investment will be primarily the inhabitants of the regions involved in the pilot test, but then can easily be extended to any other region, as it is a quite cheap solution to pump water or store energy.

3.5.4. Location of the Investment (Please describe, if possible, a specific address where the investment will be located)

3.5.4.1. Country

France

3.5.4.2. NUTS II

Bretagne

3.5.4.3. NUTS III

Oeste

3.5.4.4. Address

91 Bd de la Duchesse Anne

3.5.4.5. Postal code

35700

3.5.5. Environmental sustainability and risks associated to the investment

3.5.5.1. Please specify possible positive or negative environmental effects related to the investment. In case of environmental risks, please describe the mitigation and monitoring measures foreseen. For example, pilots related to methane emissions must rely on measurement, reporting and verification, controlling for particulate matter, namely PM2.5 and PM10 and NOx, and nitrogen oxides (NOx), proving this information to the Programme during the implementation of the project. For investments in infrastructure with an expected lifespan of at least five years, please describe the expected impacts of climate change and how their assessment and climate proofing will be ensured. Please describe other risks associated with the investment, go/no-go decisions, etc. (if any). Please confirm that the investment does not significantly harm the DNSH Climate and Environmental objectives set by the Taxonomy Regulation (EU) 2020/852. Recall that the programme welcomes the use of green public procurement, nature-based solutions, lifecycle costing criteria, etc., as stated in the Programme Manual. An ad-hoc declaration will have to be provided by each concerned partner in the pre-contracting phase.

No effects or risk expected. Work will be coordinated with environmental authorities if needed.

3.5.6. Technical and legal requirements

3.5.6.1 Please indicate the technical and legal requirements associated with the investment. If applicable, inform on permissions (e.g. building permits) required for the investment according to the respective national legislation and if these are already available.

N/A

3.5.7. Ownership

3.5.7.1. Please indicate which project partner is in charge of the investment. Please also specify who owns the site where the investment is located

PIU will be in charge of the investment

3.5.7.2 Who will retain ownership of the investment after the end of the project? Who will take care of the maintenance of the investment? How will this be done?

Ownership will be kept by PIU but local entities controlling the site (public water management entity, etc.) will take care of necessary maintenance.

3.5.7.3. If this is an infrastructure investment, will it be exploited commercially and/or its use will not be publicly available for free?

N/A

3.5.1. Investment nr. 3

3.5.2. Title:

Consumption Meters

3.5.3. Justification

3.5.3.1. Please provide a description of the investment and explain to which pilot action it contributes and why it is needed:

Purchase of 100 consumption meters to be used in two pilots, one in Madeira and one in La Palma that will measure vulnerable families' energy consumption.

3.5.3.2. Please describe the transnational relevance of the investment. Please clarify how the pilot investment can be replicated and upscale, and how the experience coming from it will be used for the benefit of the programme area:

This investment will be used to support two of the pilots one in Madeira Island and one in the island of La Palma that will measure energy consumption in vulnerable families homes.

The equipment can be then reapplied to pilots elsewhere to collect similar information in other areas.

3.5.3.3. Please describe who is benefiting (e.g. partners, regions, target groups, etc.) from this investment, and in what way:

The benefits will be mostly for the involved regions by creating self awareness of the local needs and work on solutions to tackle the issues identified in the pilots.

3.5.4. Location of the Investment (Please describe, if possible, a specific address where the investment will be located)

3.5.4.1. Country

Portugal

3.5.4.2. NUTS II

Região Autónoma da Madeira

3.5.4.3. NUTS III

Região Autónoma da Madeira

3.5.4.4. Address

Caminho da Penteada

3.5.4.5. Postal code

9020-105 Funchal

3.5.5. Environmental sustainability and risks associated to the investment

3.5.5.1. Please specify possible positive or negative environmental effects related to the investment. In case of environmental risks, please describe the mitigation and monitoring measures foreseen. For example, pilots related to methane emissions must rely on measurement, reporting and verification, controlling for particulate matter, namely PM2.5 and PM10 and NOx, and nitrogen oxides (NOx), proving this information to the Programme during the implementation of the project. For investments in infrastructure with an expected lifespan of at least five years, please describe the expected impacts of climate change and how their assessment and climate proofing will be ensured. Please describe other risks associated with the investment, go/no-go decisions, etc. (if any). Please confirm that the investment does not significantly harm the DNSH Climate and Environmental objectives set by the Taxonomy Regulation (EU) 2020/852. Recall that the programme welcomes the use of green public procurement, nature-based solutions, lifecycle costing criteria, etc., as stated in the Programme Manual. An ad-hoc declaration will have to be provided by each concerned partner in the pre-contracting phase.

There are no risks associated.

3.5.6. Technical and legal requirements

3.5.6.1 Please indicate the technical and legal requirements associated with the investment. If applicable, inform on permissions (e.g. building permits) required for the investment according to the respective national legislation and if these are already available.

Obtaining consent to install the meters on the properties.

3.5.7. Ownership

3.5.7.1. Please indicate which project partner is in charge of the investment. Please also specify who owns the site where the investment is located

Universidade da Madeira is in charge of the investment, but the devices will be used in locations in the pilot areas where the ownership of the sites cannot be specified at this point.

3.5.7.2 Who will retain ownership of the investment after the end of the project? Who will take care of the maintenance of the investment? How will this be done?

The ownership of the devices and consequent maintenance will be retained University of Madeira and they will highly likely be used for similar purposes in other projects in the future.

3.5.7.3. If this is an infrastructure investment, will it be exploited commercially and/or its use will not be publicly available for free?

N/A

3.6. Result Indicators

Result Number	Code	Programme result indicator	Result Description	Result indicator baseline	Result indicator target value
1	RCR79	Joint strategies and action plans taken up by organisations	Pilot design and their detailed technological design constitute concrete action plans to implement them.	2.00	7.00
2	RCR104	Solutions taken up or up-scaled by organisations	Concrete implemented SMH pilots, integrated with other RES; we intend to have at least one pilot implemented either in Madeira island or in Brittany and, if feasible we will implement more in other regions.	0.00	1.00

3.7. Activities list

3.7.1. Activity nr. 1

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Management of legal requirements and risk assessment	01-2024	06-2026

3.7.5. Activity description:

Firstly, tasks will focus on management of legal requirements and risk assessment of each region, ensuring an adequate implementation of the designed pilots. Based on the evaluations, some pilots will be designed and planned in detail but won't be implemented, if their development is not feasible within the project. The elaboration of the legal framework, administrative procedures and requirements analysis for tests and pilot installations will be conducted in this first stage.

The Navarra regional administration will support the Local Development Agency "Sakana Garatzen", and the Lizarraga Council in understanding the legal requirements and facilitating the administrative procedures for the successful implementation of pilots foreseen in the project.

This project will design and develop management frameworks to ensure that projects are meeting EU, National and relevant international legal requirements. It will do this by considering all binding legal frameworks guiding the implementation of SHP's. It will also develop risk assessment frameworks for identifying and analyzing potential events that may negatively impact individuals, assets, and/or the environment; and making judgments "on the tolerability of the risk on the basis of a risk analysis" while considering influencing factors.

As with all other water-based activities, hydropower must conform to the requirements of EU environmental law, which has been introduced to protect and restore Europe's rivers and lakes. These legal requirements are laid down in the Water Framework Directive, the Floods Directive, the Birds and Habitats Directives, and the Environmental Assessments Directives (Environmental Impact Assessment - EIA and Strategic Environmental Assessment - SEA Directives). This project will ensure that it meets the requirements of these legal frameworks.

With regards to the Water Framework Directive (WFD) the project will firstly establish a river basin management plan for each river basin district involved in the project. These river basin management plans will be prepared, implemented, and reviewed every 6 years accordingly. Secondly it will ensure that only developments which are consistent with other EU environmental legislation will go ahead.

The Floods Directive establishes a framework for assessing and managing flood risks. To the extent for which this is relevant in this project, the project team will during this work package develop Flood hazard and flood risk maps, that map out the identified flood risk areas per river basin (or other agreed unit area of management).

These maps would also show the potential adverse consequences associated with different flood scenarios, including information on potential sources of environmental pollution as a consequence of floods. In addition this section will develop Flood risk management plans for managing and reducing the potential adverse consequences of flooding. These plans should include a prioritised set of measures, addressing all aspects of flood risk management from prevention and protection to preparedness, taking into account the characteristics of the particular river basin or sub-basin.

Under the the SEA and EIA Directives, this section would develop a strategic environmental assessment and ensure that the following are achieved:

- Early planning, 'road mapping' and scoping of assessments;
- Early and effective integration of environmental assessments and of other environmental requirements;
- Procedural coordination and time limits;
- Data collection, data sharing and quality control;
- Cross-border cooperation, and
- Early and effective public participation

The project team is aware of the potential range of effects that hydropower can have on habitats and species, and the environment as a whole. Hence it will design a risk assessment that would consider among other the following main points:

- Changes in river morphology and riverine habitats
- Barriers to migration and dispersal of protected species
- Disruption of sediment dynamics

- d. Changes of the ecological flow regime
- e. Changes of the flow regime by peaking hydropower plants
- f. Changes in seasonal flood cycles
- g. Water chemical and temperature changes caused by dams
- h. Injuries and killing of individual animals
- i. Displacement and disturbance
- j. Effects on terrestrial species and habitats

The associated risks with the above will be determined and described. Mitigation measures will then be developed for each of the scenarios considered for the respective risks outlined above.

The entire process will be guided by calls from within the selected region to design and develop better policy instruments and other tools. Hence consideration will be given to the following points identified through initial research:

- Ø Creation of enabling policy instruments
- Ø relevant policy guides and link and good practice inventory for participating countries
- Ø Strategic plans for the future of the water industry.
- Ø A common methodology for monitoring of impacts of hydropower
- Ø Analysis of concession practices for developing hydropower plants complemented with recommendations for improvement targeted at decision-makers
- Ø Collection of legal provisions and practices in managing hydropower reservoirs
- Ø Common methodology for selecting the optimal management measures in water reservoirs.
- Ø Comparative analysis of methodologies used for hydropower plant basins in line with the Water Framework Directive
- Ø Handbook detailing innovative technologies for small hydropower plants
- Ø Manual for small hydropower plant implementation including legal, technical and economic aspects
- Ø Report from testing tools for evaluating hydropower potential
- Ø Simplify and reduce regulatory hurdles for community energy development in municipalities, adapting local policy where possible
- Ø A common methodology for monitoring of impacts of hydropower
- Ø To remove existing bottlenecks in energy to fulfil the goals of the Energy Union
- Ø Methodologies and guidelines serving renewable energy policies and measures to ensure reliable energy supplies and energy efficiency.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

1. Combined legal management Framework document

This document takes into consideration and embodies all the required legal frameworks and management plans required to be adhered to for implementing SHP's in the selected regions. It is collection of legal provisions and practices in managing hydropower reservoirs incl. for flood prevention.

2. Combined Risk assessment and mitigation strategy document

This is a combined document that has template documents for completing a risk assessment for planning and implementing SHP's in the selected regions

3. Environmental Assessment Policy Document

This is/are policy document guiding the planning and implementation of SHP's in the selected regions.

4. "Catalogue of Measures". The catalogue is a comprehensive and lucid source of data which consists of all relevant and necessary information about possible measures in the field of energy savings and renewable energy sources. It is a tool for common use available via the project website.

3.7.6.2 Deliverable(s) title(s) & description:

1. Design and develop legal management frameworks

This is a collection of legal frameworks to be considered when planning and implementing SHP's in the selected regions

2. Develop risk assessment frameworks

This is a draft document of risks to be considered when planning and implementing SHP's in the selected region

3. River basin management plan

This are draft river basin management plans that embody considerations of local, national, EU and international requirements

4. Develop Flood hazard and flood risk maps

This are draft Flood hazard and flood risk plans that embody considerations of local, national, EU and international requirements

5. Develop a strategic environmental assessment

This is a draft environmental assessment strategy with considerations of local, national, EU and international requirements.

3.7.7. Output Indicators(s)

Code	Description	Target
RCO87	Organisations cooperating across borders	6.00

3.7.1. Activity nr. 2

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Detailed use-case specification	01-2024	12-2025

3.7.5. Activity description:

Scientific-technical works will be carried out to define the general characteristics and conceptual design of the potential pilots in the different regions. The results obtained will define, for each use-case: location data; sources of energy and their capacity and frequency; energy production systems; specific case objectives, types of technological products and services to be developed; potential benefits expected, innovations, evaluation of specific risks and legal issues, environmental impacts, among other aspects.

Parallel to the energy generation use-cases; we'll design specific use-cases for vulnerable families to lower their energy bills and eventually consume from cheaper energy sources provided by the pilots. The goal is to select possible households to eventually implement energy measurement hardware and monitoring software so they can lower and adapt their energy consumption. For that, and in this activity, the specific measurement design options will be selected, as well as the best regions to implement this initiative.

During the use-case specification, a plan will be defined to handle the communication with affected individuals in the use-case. It is crucial to keep participants informed about the different aspects of the pilots, such as equipment installed, or who to alert if anything malfunctions. Individuals' routines could surely be affected by the interventions planned for the project, and the willingness of participants to engage with the work will be crucial for the success of the pilot activities.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

Report of detailed use-case specification with contents as explained above.

3.7.6.2 Deliverable(s) title(s) & description:

Intermediate report of the use-case specification at the end of the first year.

3.7.7. Output Indicators(s)

Code	Description	Target
RCO87	Organisations cooperating across borders	15.00
RCO116	Jointly developed solutions	7.00

3.7.1. Activity nr. 3

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Development of technical solutions for the pilots	07-2024	06-2026

3.7.5. Activity description:

This activity focuses on the design and definition of the most appropriate technical solutions for the pilots deemed as relevant and feasible in the different regions of the Atlantic area involved in this project. The technical characteristics of the physical facilities, the concrete technologies and concrete equipment to be used, the work plans for implementation, the test programmes, the recommendations for construction, operation and maintenance, training needs, as well as other aspects to guarantee a successful implementation of the physical investments of the pilots will be elaborated. The tasks will be carried out in coordination between the academic and technology partners and the local implementation partners in each region. The results will provide the most appropriate implementation guidance for each pilot.

The technical solutions to implement will follow the use case specifications defined in the previous activity. This activity will encompass the design and planning of four main aspects:

- 1) Site preparation: it is expected that the selected sites might need some preparation before the equipment is installed, this task might include activities such as refurbishment of the local grid, small construction activities to meet the equipment criteria, or installation of grid and equipment safeguards.
- 2) Installation: human resources will install the equipment at the selected sites, and perform the first on site tests. It is also important to perform integration tests with the remaining infrastructure to be used in the project (digital and physical).
- 3) Maintenance: It is predictable that deployed infrastructure will require maintenance during the period of the project. This implies the need for continuous monitoring of the infrastructure, preventive maintenance of critical components (digital and physical).

Decommission: If that should be the case, a plan to decommission and what to do with the installed equipment should be defined so that it is communicated in time to all the relevant actors.

In the second half of this task, and according to the feasibility and identified risks, designed pilots will be selected for concrete implementation in the next activity.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

Guidelines report for pilots implementation, as explained above.

Feasibility assessment of the different designed pilots and selection of a list of pilots to implement.

3.7.6.2 Deliverable(s) title(s) & description:

Intermediate report of guidelines for pilots implementation by September of 2025

3.7.7. Output Indicators(s)

Code	Description	Target
RCO83	Strategies and action plans jointly developed	1.00
RCO87	Organisations cooperating across borders	9.00
RCO116	Jointly developed solutions	7.00

3.7.1. Activity nr. 4

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Implementation	10-2024	06-2026

3.7.5. Activity description:

The implementation activity will take care of the local development and necessary physical investments and implementation works for each of the selected pilots selected in the previous activity. The partners in each region will be in charge of implementing the test phases and pilot energy production facilities, as well as the pilot energy measurements at the selected vulnerable families households. This activity includes all works to be developed such as preparation of local documentation, environmental assessment and construction projects for pilot tests; administrative procedures and obtaining of permits; establishment of agreements, implementation contracts and power generation communities; training and capacity building of local staff, construction of micro-hydroelectric installations, commissioning and operation of pilots, technology transfer to communities and users and local dissemination of project results tasks.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

Implementation of at least three pilots - two regarding energy measurement and consumption efficiency in vulnerable families and one with a micro-hydroelectric installation.

3.7.6.2 Deliverable(s) title(s) & description:

Pilot implementation progress reports - during the implementation, which is expected to happen between M10 and M30 and lasting 21 months two progress reports will be produced, at months M17 and M24.
Pilot results report - a final implementation report will be produced at the last month of this activity (M30).

3.7.7. Output Indicators(s)

Code	Description	Target
RCO84	Pilot actions developed jointly and implemented in projects	3.00
RCO87	Organisations cooperating across borders	15.00

3. WP nr. 4

Work Package title	Start date	End date	Duration (Months)
Assessment and market creation	01/07/2025	31/12/2026	18

3.1. Implementation summary:

Assessment and Market Creation

The project will adopt a collaborative approach to both assess, understand and describe the market creation process. It encompasses conducting stakeholder engagement initiatives, to gain deeper insights into goals, needs, and audience/market. By working closely with relevant key stakeholders, and the community, the activities described below will constitute our project's approach to assessment and market creation.

3.2. Project specific objective:

Assess the pilot regions to determine what are the viable microhydro services and their commercial potential, definition of policy recommendations and implementation of guidelines.

3.3. Communication objective(s) and target audience:

The main objective for communication on this WP is related to the importance of contribution to the potential exploitation of results, to support the uptake of results by policymakers, regulators and communities. With this information material, providing the project results, other business companies and clients in general will be able to participate, once the project is finished successfully, on its commercialization.

3.4. Overall description of this Work Package and responsibilities:

Comparative assessment of the pilot regions, determination of microhydro services and their commercial potential and definition of policy recommendations and implementation guidelines.

Activity 1

Leader: TCD

Partners: EB, TRISOLARIS, UMa, LPRC, LNEG, PIU, ARM

Activity 2

Leader: TCD

Partners: TRISOLARIS, LPRC, UMa, PIU

Activity 3

Leader: TRISOLARIS

Partners: all partners

Ass. Partners: EEM, CRBM, CU

3.5. Investments list

3.6. Result Indicators

Result Number	Code	Programme result indicator	Result Description	Result indicator baseline	Result indicator target value
2	RCR79	Joint strategies and action plans taken up by organisations	Policy recommendations as produced by activity 4.3 constitute a joint strategy and a set of action plans that can be used by national and regional authorities to foster more widespread adoption of SMH solutions integrated with RES.	0.00	1.00
1	RCR104	Solutions taken up or up-scaled by organisations	Microhydro services definition as per activity 4.2, constitutes a set of solutions, at the end of the project, having been taken up by some project partners and available to be up-scaled by other partners and regions.	0.00	1.00

3.7. Activities list

3.7.1. Activity nr. 1

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Comparative assessment of the pilot regions	07-2025	12-2026

3.7.5. Activity description:

This work package will focus on the comparative evaluation of the activities performed in the pilot sites, described above, and the achieved results. The evaluation is developed on a site-base and using a set of key indicators derived from the test-design procedure.

A comparative table will be used to synthesize and visualize the differences and similarities among the pilots. At the end, some critical considerations will be expressed with regards to the adaptability of the test design procedure itself and the influence of contextual conditions.

Following the detailed description of the different activities to be carried out in each of the pilot sites, a comparative review becomes necessary to critically evaluate the processes as well to understand the limitations and opportunities associated with the material inputs and processes.

The evaluation will mainly focus on the co-design, planning and implementation phases - including the setting up, structuring and development of the processes and involving regional stakeholders and local community actors. Important is to note that the structuring and organization of project activities cannot be replicated identically in different situations. It will be carefully calibrated according to the specific social, cultural, economic and legislative context of the pilot regions. This would ensure that only results whose concrete application and implementation are indeed realistic, context induced and thus feasible are achieved.

The evaluation of the pilot experiences will be done using key indicators yet to be developed, but in line with the design, development and implementation of the pilots. For each of the indicators a brief description will be provided according to the actual experience. This would allow for quick and easy comparison of the various aspects in focus and also provide a focused and compact review of activities carried out on each pilot site.

Finally the experiences will be compared, using the indicators and a summarizing table to draw a critical conclusion of the effectiveness and adaptability of the activities.

Some helpful tools to be developed and used during this section of the work package would include:

Site assessment reports

Topographic base maps

Stakeholder map

Illustrative posters of transformation scenarios

Needs assessment reports

Aligned design document of project to needs assessment

Designed implementation process document

Socio economic data report

Environmental questionnaire

This analysis will encompass following key considerations, which, whenever necessary will form part of the project's deliverables and outputs:

1. Analysis of concession practices for developing hydropower plants complemented with recommendations for improvement targeted at decision-makers
2. Common methodology for selecting the optimal management measures in water reservoirs concerning sediments and flood prevention
3. Comparative analysis of methodologies used for establishing environmental flows in hydropower plant basins in line with the Water Framework Directive
4. Comparison of ecological and water quality assessment techniques applied to surface water bodies
5. Results from testing different tools for sediment flushing from reservoirs with the aim of flood prevention
6. Results from testing the tools in selected regions
7. Results from testing tools for environmental flow assessment and for evaluating hydropower potential in river basins
8. Results from testing tools for evaluating hydropower potential of selected regions accompanied by a study of problems in using this potential

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

Comparative assessment report as per description above.

3.7.6.2 Deliverable(s) title(s) & description:

Intermediate comparative assessment report produced in M30.

3.7.7. Output Indicators(s)

Code	Description	Target
RCO87	Organisations cooperating across borders	8.00

3.7.1. Activity nr. 2

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Determination of microhydro services and their commercial potential	10-2025	12-2026

3.7.5. Activity description:

Microhydro services

This activity will focus on determining the necessary micro hydro services required to sustainably implement and run SHP's in the selected regions. It also looks at the commercial potential of SHP in the selected regions. These will be influenced by context induced factors, but also requirements for SHP systems. SHP systems usually generate up to 100 kilowatts of electricity, but a 10-kilowatt system generally can provide enough power for a large home, a small resort, or a hobby farm. Consequently, activities will focus on identifying the needed services associated with these. A typical SHP system needs a turbine, pump, or waterwheel to transform the energy of flowing water into rotational energy, which is converted into electricity. Hence services will be associated with these. In addition, there will be services provided by local authorities and government agencies which will need to be identified and listed. SHP System Components comprise of the following for which associated services will have to be identified, developed or made adequate for the intended plants. These components include:

- Water conveyance -- channel, pipeline, or pressurized pipeline (penstock) that delivers the water
- Turbine, pump, or waterwheel -- transforms the energy of flowing water into rotational energy
- Alternator or generator -- transforms the rotational energy into electricity
- Regulator -- controls the generator
- Wiring -- delivers the electricity.
- Batteries to store the generated electricity

Since traditionally, many systems also use an inverter to convert the low-voltage direct current (DC) electricity produced by the system into 120 or 240 volts of alternating current (AC) electricity, services that offer household appliances that run on DC electricity maybe required and need to be provided.

In addition to this, whether a SHP system will be grid-connected, stand-alone or connected to other sources and storage solutions will determine requirements for system components. These additional systems will thus also need their and associated service providers.

Going therefore from results of the needs assessment, learning from the investigated pilots and prototypes, as well as the above, the necessary SHP services will be identified for the investigated regions.

Commercial Potential

This task will also investigate the commercial potential of the SHP's in the studied regions. The electricity generated can potentially be supplied to the local community with the surplus electricity sold to the regional grid. By investing in a small hydropower system, it is possible to reduce exposure to future fuel shortages and price increases. If the potential output of a scheme is attractive, then its commercial opportunities require to be known. Hence this phase of this work package will identify ways of determining the scheme's commercial potential and consequent

sustainability.

Economic Analysis

The cost analysis of hydropower projects will differ from one location to another due to factors like the site's characteristics and the project's requirements. However, there are two significant components of hydropower plant project installation costs which will be considered in this project:

- a. the electromechanical equipment costs and
- b. the civil work needed for the project.

The electromechanical cost covers equipment such as turbines, generators, transformers, cabling, and the controlling system. The civil work includes the mini-hydro power plant construction, grid connection, engineering procurement, construction, and development costs. These costs will have to be determined for the selected regions.

According to the international renewable agency (IRENA), the total installation cost of the hydropower plant project varies between USD/kW 807 and USD/kW 3334. These will be used initially as guiding figures but actual figures for the selected region will be determined and verified.

In addition, the operation and maintenance (O and M) costs for the selected regions will be determined as well as the representative percentage of the total investment cost of projects. Consequent to this, an operation and maintenance cost range as a percentage of the total investment costs will be determined.

Furthermore, in determining the commercial potential, the payback period (PBP) and the return on investment (ROI) will be determined since both factors play a crucial role in selecting and measuring the success of any project. They can be determined by employing mathematical equations that use the following variables:

- a. $ROI = \text{Investment Cost}$
- b. $PBP = \frac{\text{PR}(\text{yearly profit of the project})}{\text{AR} - \text{O\&M}}$
- c. AR (Annual revenue)

$PR = AR - O\&M$

$AR = E \times ECT$ (E stands for Annual Max Output Energy, and ECT is the electricity sold to the grid tariff.

The project would assume that the selling tariff is the same as the buying from grid tariff, which would need determining for the region.

This project will calculate the payback period for three scenarios:

- a. low-investment project
- b. average investment project
- c. and high-investment project

This will help categorize the commercial viability and potential of these investment forms.

Plant Capacity Factor

Another critical factor that affects the investment in a power plant is the capacity factor (CF). It represents the ratio of actual output energy over time to the equipment's maximum potential output energy.

$CF = \frac{\text{Actual Energy}}{\text{365 days} \times 24 \text{ hour} \times \text{maximum power}}$

Typically, CF is assumed to be 100%. However, this is an ideal situation where the power plant runs continuously all through the year without interruption. We do not know whether this can be achieved in the selected region. Since SHP's depend on water flow, this would have to be determined in the given context, since it would be determined by site characteristics, turbine selection, and power demand.

CO2 Emissions Reduction

More and more, there are models used whereby CO2 emission can be quantified in monetary terms. Conventional energy resources produce power by burning fossil fuels, which results in emitting CO2 into the environment. Therefore, adopting renewable energy sources in the grid reduces the amount of carbon dioxide emissions. To evaluate the hydropower turbines' impact on the environment, the amount of CO2 emission saving will be determined by calculating the CO2 emissions that would be produced if the required electrical power is generated using conventional fossil fuel. The CO2 emission in the selected contexts will be determined and factored into the commercial potential of the projects.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

Micro hydro services document - A single document outlining required micro hydro services, their roles and responsibilities and commercial potential for the selected regions

3.7.6.2 Deliverable(s) title(s) & description:

Intermediate version of Micro hydro services document at M30.

3.7.7. Output Indicators(s)

Code	Description	Target
RCO87	Organisations cooperating across borders	5.00
RCO116	Jointly developed solutions	7.00

3.7.1. Activity nr. 3

3.7.2. Title	3.7.3. Start date	3.7.4. End date
Define policy recommendations and implementation guidelines	07-2026	12-2026

3.7.5. Activity description:

The main objectives of this Activity are to provide a set of policy recommendations to support decision makers, at different levels, and provide implementation guidelines that facilitate and promote the scaling-up of the renewable MicroHydro solutions and the project results, and contributing, at the same time, to accomplish the EU Green Deal and Carbon Neutral objectives.

Based on the results from previous Activities and WPs, with special focus on WP2 (Local and regional engagement, Energy Communities and Energy Poverty) and WP3 (Pilot design and implementation), this Activity will:

- analyze identified needs, constraints/barriers, and gaps on the implementation of micro and small-scale hydropower, as well as the MicroHydro solutions, in remote and isolated areas;
 - map the existent and alternative relevant funding opportunities (e.g. EU funding, private foundations, regional and national supports) and mechanisms (e.g. public-private partnerships, grants, pilot actions) to support further deployment of MicroHydro solutions, at the EU level and with special focus on the Atlantic Area Member States, for stakeholders and end-users to apply and become more energy self-sustainable
 - develop a set of recommendations and guidelines, at the EU, national and/or local levels, to both inform and support policy and decision-makers and to support end-users to stimulate the scaling-up of MicroHydro solutions.
- Capitalizing from the multidisciplinary and cross sectorial IsoMicroHydro Consortium, this Activity will consult all partners, especially WP leaders, in the analysis and discussion of the most suitable recommendations and guidelines to be developed and delivered in a policy recommendation document. Key stakeholders identified and involved in WP2 will also be consulted to contribute and validate final policy recommendations.

3.7.6. Output & Deliverables: This information relates to the indicators (3.7.7) selected

3.7.6.1. Output title & description:

Intermediate versions of the two reports described in the next section delivered at M33.

3.7.6.2 Deliverable(s) title(s) & description:

Policy recommendations report - a report identifying policy recommendations to inform and support policy- and decision-makers, stimulating the scaling-up of MicroHydro solutions.

Implementation guidelines report on renewable MicroHydro solutions - a report identifying implementation guidelines to inform and support end-users, stimulating the scaling-up of MicroHydro solutions.

Manual for small hydropower plant implementation including legal, technical and economic aspects.

3.7.7. Output Indicators(s)

Code	Description	Target
RCO83	Strategies and action plans jointly developed	2.00
RCO87	Organisations cooperating across borders	15.00

4. Project Partnership

Partner Number	Entity Name	Position	Country	NUTS II	NUTS III	Legal Status
1	Universidade da Madeira(Faculdade de Ciências Exatas e Engenharias)	Lead partner	Portugal	Região Autónoma da Madeira	Região Autónoma da Madeira	Public body
2	La Palma Research Centre(La Palma Office)	Partner	Spain	Canarias	La Palma	Profit-making private organization
3	Energía Bonita S. Coop.(-)	Partner	Spain	Canarias	La Palma	Not-for-profit private organization
4	Trinity College Dublin(School of Engineering)	Partner	Ireland	Eastern and Midland	Dublin	Public body
5	Laboratório Nacional de Energia e Geologia, I.P.(Laboratório Nacional de Energia e Geologia, I.P.)	Partner	Portugal	Área Metropolitana de Lisboa	Área Metropolitana de Lisboa	Public body
6	ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação(EELab - Enterprise Engineering Lab)	Partner	Portugal	Região Autónoma da Madeira	Região Autónoma da Madeira	Not-for-profit private organization
7	Pump-Ille-Up(ille-et-vilaine)	Partner	France	Bretagne	Ille-et-Vilaine	Profit-making private organization
8	Trisolaris Advanced Technologies(TRISOLARIS ADVANCED TECHNOLOGIES, LDA)	Partner	Portugal	Região Autónoma dos Açores	Região Autónoma dos Açores	Profit-making private organization
9	Gobierno de Navarra(Departamento de Desarrollo Económico y Empresarial)	Partner	Spain	Comunidad Foral de Navarra	Navarra	Public body
10	COMUNIDAD DE AGUAS RIEGOS COMARCA SANTA CRUZ DE LA PALMA BREÑAS MAZO(GERENCIA)	Associate partner	Spain	Canarias	La Palma	Not-for-profit private organization

11	EEM - Empresa de Electricidade da Madeira S.A.(Direção de Estudos e Planeamento)	Associate d partner	Portugal	Região Autónoma da Madeira	Região Autónoma da Madeira	Profit-mak ing private organizati on
12	Sakanako Garapen Agentzia(Koordinazioa)	Associate d partner	Spain	Comunida d Foral de Navarra	Navarra	Not-for-pr ofit private organizati on
13	Cardiff University(School of Engineering)	Associate d partner	United Kingdom	East Wales	Cardiff and Vale of Glamorgan	Not-for-pr ofit private organizati on
14	ARM-Águas e Resíduos da Madeira, S.A.(Direção-Geral dos Serviços de Águas)	Partner	Portugal	Região Autónoma da Madeira	Região Autónoma da Madeira	Public body
15	Associação de Jovens Agricultores da Madeira e Porto Santo(Jovens Agricultores)	Associate d partner	Portugal	Região Autónoma da Madeira	Região Autónoma da Madeira	Profit-mak ing private organizati on

4.0 Universidade da Madeira(Faculdade de Ciências Exatas e Engenharias)

4.0.1 Partner Number:

1

4.0.2 Position in the partnership:

Lead partner

4.1.1 Department

4.1.1.1 Abbreviation:

FCEE

4.1.1.2 Entity name:

Universidade da Madeira

4.1.1.3 Entity name in English:

University of Madeira

4.1.1.4 Department name:

Faculdade de Ciências Exatas e Engenharias

4.1.1.5 Organization type:

Universities and higher education

4.1.1.6 Entity legal status:

Public body

4.1.1.7 Tax number:

680041982

4.1.1.8 Website:

www.uma.pt

4.1.1.9 Organization Size:

410

4.1.1.10 VAT recovery:

True

4.1.2. Location

4.1.2.1 Country:

Portugal

4.1.2.2. NUTS II

Região Autónoma da Madeira

4.1.2.3. NUTS III

Região Autónoma da Madeira

4.1.2.4. City

Funchal

4.1.2.5. Address

Colégio dos Jesuítas - Rua dos Ferreiros, 9000-082 - Funchal, Portugal

4.1.3 Documentation

4.1.3.1. Vat statement

VAT Statement_UMa.pdf

4.1.3.2. Bank statement

Financial_ID_form_UMa_signed.pdf

4.1.3.3. Lead Partner declaration

Project Lead Partner Declaration_UMa.pdf

4.1.3.3. Lead Partner declaration date

02/03/2023

4.1.3.5. State Aid declaration

State Aid information_UMa.pdf

4.1.3.6 State Aid declaration date

02/03/2023

4.2.1 Contact person

4.2.1.1 Name:

David Sardinha Andrade de Aveiro

4.2.1.2. Email:

daveiro@staff.uma.pt

4.2.1.3. Phone:

+351291705178

4.2.1.4. Address:

Campus Universitário da Penteada

4.2.1.5. Post code:

9020-105

4.2.1.6. City:

Funchal

4.2.1.7. Country:

Portugal

4.2.2. Legal representative

4.2.2.1. Name:

Elsa Maria dos Santos Fernandes

4.2.2.2. Email:

gabinete@reitoria.uma.pt

4.2.2.3. Phone:

+351291209400

4.2.2.4. Address:

Colégio dos Jesuítas, Rua dos Ferreiros

4.2.2.5. Post code:

9000-082

4.2.2.6. City:

Funchal

4.2.2.7. Country:

Portugal

4.2.2.8. Legal Representative declaration:

4.2.2.8.rar

4.2.2.9. Signature date document:

02-03-2023

4.2.3. Financial Manager

4.2.3.1. Name:

Emília Maria Fernandes pimenta

4.2.3.2. Email:

projetos@mail.uma.pt

4.2.3.3. Phone:

+351291209471

4.2.3.4. Address:

Colégio dos Jesuítas, Rua dos Ferreiros

4.2.3.5. Post code:

9000-082

4.2.3.6. City:

Funchal

4.2.3.7. Country:

Portugal

4.3. Bank account

4.3.1. IBAN:

PT50 0018 00080147991302092

4.3.2. SWIFT:

TOTAPTPL

4.3.3. Bank:

Banco Santander Totta

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

The University of Madeira (UMa) is a state university established in 1988, organised into four faculties (Exact Sciences and Engineering, Life Sciences, Social Sciences, Arts and Humanities) and two Higher Schools (Health; Technologies and Management). UMa runs graduate, master and doctorate degrees in Informatics Engineering and in Electrical and Computer Engineering, having a highly qualified group of professors and researchers in these areas.

Scientific research activities at UMa are spread in various areas of knowledge with financial support from FCT/FEDER and from the European Community through INTERREG international projects. Research has been carried out in partnership with several national and international institutions, with a particular effort to achieve excellence and a high degree of internationalisation.

The mission of the University of Madeira is to be a university of international level, achieving excellence through education, research and service to its regional, national and international communities.

UMa will provide most of the technological competences and knowledge needed to implement the IsoMicroHydro project, namely competences in electrical and civil engineering, energy, hydraulics, artificial intelligence and software engineering.

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

UMa will contribute with its vast experience in participating and coordinating many different European, national and regional projects. It will also contribute to the review of SoA on hydropower and integration with RES, taking into account its experience in energy related projects, addressing solar and hydro power, smart charging, smart energy measurement, among others. Also of high value to IsoMicroHydro will be its experience in the use of Artificial Intelligence to model, simulate and dynamic control of different scenarios of RES use and integration, also with the Grid. In concrete, UMa will be leading WP1 and WP2, and the following activities:

Activity 1.1 Review current SoA of microhydro technology;

Activity 3.2. Detailed use-case specification;

Activity 3.3. Development of technical solutions for the pilots;

Activity 3.4. Implementation.

It will also contribute in the following:

Activity 1.2 Assessment of implemented prototypes in the participating regions;

Activity 1.3. Study of the needs and the microhydro potential of the pilot areas;

Activity 1.4. Review and assessment of integration with other Renewable Energy Sources, Energy Storage Solutions and the Grid;

Activity 2.1 Networking with other projects and initiatives on integration of renewable energy in isolated areas;

Activity 2.2. Involving Social actors to reduce energy poverty;

Activity 2.4. Raising public awareness on renewables solutions in atlantic isolated areas;

Activity 4.1. Comparative assessment of the pilot regions;

Activity 4.2. Determination of microhydro services and their commercial potential;

Activity 4.3. Define policy recommendations and implementation guidelines.

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

UMa is the lead partner and project coordinator, with experience in managing projects and ecosystems with multi-disciplinary teams.

Since 2000, there is a growing activity of scientific research developed in UMa, spread in various areas of knowledge, such as Arts and Humanities, Education, Life, Earth and Environmental Sciences, Mathematics, Physical and Engineering Sciences and Social Sciences.

Most of this research has received financial support from FCT/ FEDER and also from the European Community through INTERREG and H2020 international projects. This research has been carried out in partnership with several national and international institutions, with a particular effort to achieve a high degree of excellence and internationalization.

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

UMa is the lead partner and project coordinator, with experience in managing ecosystems with multi-disciplinary teams. UMa will work closely with all partners, supporting their work throughout the project and will also make sure that the project goals and outcomes are timely achieved.

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

N/A

4.4.6. In the case of partners from outside the programme area:
Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?

N/A

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

518,486.82 €

4.6.2. Total Costs

518,486.82 €

4.6.3. Funding amount (ERDF)

388,865.12 €

Co-financing rate

75.00 %

4.6.4. Partner contribution

129,621.70 €

4.6.5. Other Fundings

0.00 €

4.6.6. Budget spent outside Programme Area

0.00 €

Percentage between budget spent outside Programme Area and Total Eligible Budget

0.00 %

4.6.7. Origin of co-financing of the partner's contribution

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
Universidade da Madeira (Faculdade de Ciências Exatas e Engenharias)	Public body	129,621.70 €	25.00 %

4.7. Partner budget by budget line and year

4.7.1. Total Eligible Budget

518,486.82 €

4.7.2. Staff Costs – Calculation Method

Real costs staff and simplified costs office and travel

4.7.3. Preparation costs

2024	
Budget:	3,496.02 €

4.7.4. Staff costs

2024	
Budget:	120,371.49 €
2025	
Budget:	120,371.49 €
2026	
Budget:	120,371.49 €

4.7.5. Office and administrative expenditure

2024	
Budget:	18,055.72 €
2025	
Budget:	18,055.72 €
2026	
Budget:	18,055.72 €

4.7.6. Travel and accommodation costs

2024	
Budget:	18,055.72 €
2025	
Budget:	18,055.72 €
2026	
Budget:	18,055.72 €

4.7.7. External expertise and services costs

2024	
Budget:	9,000.00 €
Description:	Costs with accounting for validation of expenses, events for awareness-raising actions (coffee-breaks, etc.) and contracting of services for promotional material.
Award procedure:	3 different budgets are required from the local enterprises in order to chose the most convenient one.
2025	
Budget:	9,000.00 €

Description:	Costs with accounting for validation of expenses, events for awareness-raising actions (coffee-breaks, etc.) and contracting of services for promotional material.
Award procedure:	3 different budgets are required from the local enterprises in order to choose the most convenient one.
2026	
Budget:	9,000.00 €
Description:	Costs with accounting for validation of expenses, events for awareness-raising actions (coffee-breaks, etc.) and contracting of services for promotional material.
Award procedure:	3 different budgets are required from the local enterprises in order to choose the most convenient one.

4.7.8. Equipment costs

2024	
Budget:	6,180.69 €
Description:	Server usage for simulations of different integration scenarios of different renewable sources; Laptops for the hired personnel; Smart Meters and Consumption Meters
Award procedure:	3 different budgets are required from the local enterprises in order to choose the most convenient one.
2025	
Budget:	6,180.66 €
Description:	Server usage for simulations of different integration scenarios of different renewable sources; Laptops for the hired personnel; Smart Meters and Consumption Meters
Award procedure:	3 different budgets are required from the local enterprises in order to choose the most convenient one.
2026	
Budget:	6,180.66 €
Description:	Server usage for simulations of different integration scenarios of different renewable sources; Laptops for the hired personnel; Smart Meters and Consumption Meters
Award procedure:	3 different budgets are required from the local enterprises in order to choose the most convenient one.

4.7.9. Infrastructures and works costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €

Description:

Award procedure:

4.8. Complementary information

4.8.1. Investment Title

4.8.2. Investment Budget

0.00 €

4.8.3. Technical description and justification

4.8.4. Investment requirements

4.8.5. Ownership and durability

4.0 La Palma Research Centre(La Palma Office)

4.0.1 Partner Number:

2

4.0.2 Position in the partnership:

Partner

4.1.1 Department

4.1.1.1 Abbreviation:

LPRC

4.1.1.2 Entity name:

La Palma Research Centre

4.1.1.3 Entity name in English:

La Palma Research Centre

4.1.1.4 Department name:

La Palma Office

4.1.1.5 Organization type:

Small and medium enterprises

4.1.1.6 Entity legal status:

Profit-making private organization

4.1.1.7 Tax number:

B76559152

4.1.1.8 Website:

www.lapalmacentre.eu

4.1.1.9 Organization Size:

6

4.1.1.10 VAT recovery:

True

4.1.2. Location

4.1.2.1 Country:

Spain

4.1.2.2. NUTS II

Canarias

4.1.2.3. NUTS III

La Palma

4.1.2.4. City

Los Llanos de Aridane

4.1.2.5. Address

Avenida Venezuela 19, 1º Izq

4.1.3 Documentation

4.1.3.1. Vat statement

1 VAT Statement_LPRC.pdf

4.1.3.2. Bank statement

2 Bank statement_LPRC.pdf

4.1.3.3. Project Partner declaration

3 Project Partner declaration_LPRC.pdf

4.1.3.3. Project Partner declaration date

28/02/2023

4.1.3.5. State Aid declaration

4 State Aid declaration_LPRC (002).pdf

4.1.3.6 State Aid declaration date

28/02/2023

4.2.1 Contact person

4.2.1.1 Name:

Laia d'Armengol

4.2.1.2. Email:

laia.darmengol@lapalmacentre.eu

4.2.1.3. Phone:

+34637093412

4.2.1.4. Address:

Avenida Venezuela 19, 1º izq

4.2.1.5. Post code:

38760

4.2.1.6. City:

Los Llanos de Aridane

4.2.1.7. Country:

Spain

4.2.2. Legal representative

4.2.2.1. Name:

Adrienn Cseko

4.2.2.2. Email:

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4.2.2.3. Phone:

+34635619997

4.2.2.4. Address:

Avenida Venezuela 19, 1º izq

4.2.2.5. Post code:

38760

4.2.2.6. City:

Los Llanos de Aridane

4.2.2.7. Country:

Spain

4.2.2.8. Legal Representative declaration:

4.2.2.8.rar

4.2.2.9. Signature date document:

27-02-2023

4.2.3. Financial Manager

4.2.3.1. Name:

Gabriella Foti

4.2.3.2. Email:

gabriellafoti@lapalmacentre.eu

4.2.3.3. Phone:

+34922043804

4.2.3.4. Address:

Avenida Venezuela 19, 1º izq

4.2.3.5. Post code:

38760

4.2.3.6. City:

Los Llanos de Aridane

4.2.3.7. Country:

Spain

4.3. Bank account

4.3.1. IBAN:

ES64 0081 0546 1900 0112 3117

4.3.2. SWIFT:

BSAB ESBB

4.3.3. Bank:

Banco Sabadell

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

La Palma Research Centre has extensive expertise in Dissemination, Exploitation and Communication actions applied to EU-funded projects to various degrees while leading WPs and Tasks. LPRC has a core expertise in hydrogeology and has specialised in science communication, public outreach and clustering, with a vast experience in the organisation of workshops, conferences and clustering events both at regional (Macaronesia) and European levels.

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

LPRC will be leading activity 2.1. "Networking with other projects and initiatives on integration of renewable energy in isolated areas" and will contribute to all work packages supporting activities related with assessing the current state of the art of microhydro technology (activity 1.1), reduction of energy poverty (activity 2.2), raising public awareness (activity 2.4), designing the use-case specifications and implementation in the Canary Islands (activities 3.2 and 3.4), assessing the pilots (activity 4.1), market creation (activity 4.2) and policy recommendations and implementation guidelines (activity 4.3).

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

LPRC has more than 10-years experience participating and managing EU co-financed projects. LPRC is currently leading AGEO - Platform for Atlantic Geohazard Risk Management, and participating in EMPORIA4KT - Empower Academia for Knowledge Transfer for Value Creation in the Atlantic Area, both projects of the Interreg Atlantic Area programme 2021-2027 (call-2).

LPRC has also vast experience in the Horizon 2020 and Horizon Europe programmes, having participated in 20 projects Horizon 2020 and coordinating 4 of them. Currently, LPRC is coordinating the Horizon Europe project MACARONIGHT 2022 - 2023 "The Researchers' Night of the Macaronesia" and participating in several Horizon Europe projects related with geosciences and energetic transition.

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

LPRC has vast expertise in leading communication and outreach WPs of communication and dissemination as well as tracking the impact of communication actions to assess their consistency and effectiveness in EU-funded projects dedicated exclusively to science communication, for example, some projects on Framework Programme 7, VOLCANOE'S NIGHT H2020 project series, MACARONIGHT H2020 project series and AGEO Interreg. Besides, LPRC has also been involved in leading WP of communications on other Horizon Europe and Horizon 2020, such as TRIDENT, CIRAN, KINDRA and UNEXMIN.

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

N/A

**4.4.6. In the case of partners from outside the programme area:
Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?**

N/A

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

The microhydro energy installations will be operationalized by an operator that will charge for this.

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

83,686.00 €

4.6.2. Total Costs

83,686.00 €

4.6.3. Funding amount (ERDF)

62,764.50 €

Co-financing rate

75.00 %

4.6.4. Partner contribution

20,921.50 €

4.6.5. Other Fundings

0.00 €

4.6.6. Budget spent outside Programme Area

0.00 €

Percentage between budget spent outside Programme Area and Total Eligible Budget

0.00 %

4.6.7. Origin of co-financing of the partner's contribution

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
La Palma Research Centre (La Palma Office)	Profit-making private organization	20,921.50 €	25.00 %

4.7. Partner budget by budget line and year

4.7.1. Total Eligible Budget

83,686.00 €

4.7.2. Staff Costs – Calculation Method

Real costs staff and simplified costs office and travel

4.7.3. Preparation costs

2024

Budget: 3,496.00 €

4.7.4. Staff costs

2024

Budget: 17,100.00 €

2025

Budget: 17,100.00 €

2026

Budget: 17,100.00 €

4.7.5. Office and administrative expenditure

2024

Budget: 2,565.00 €

2025

Budget: 2,565.00 €

2026

Budget: 2,565.00 €

4.7.6. Travel and accommodation costs

2024	
Budget:	2,565.00 €
2025	
Budget:	2,565.00 €
2026	
Budget:	2,565.00 €

4.7.7. External expertise and services costs

2024	
Budget:	4,500.00 €
Description:	Co-organization of workshops, invitations to field visits and joint communication activities. Production of promotional material (Activity 2.1)
Award procedure:	LPRC is not subject to public procurement law. However, external contract procedures will respect the basic principles on which procurement standards are based, following Eu rules, national rules and internal rules of the organization. As such, we will give preference to best value or lowest price, promoting environmentally responsible purchasing and integrating social components whenever possible.
2025	
Budget:	4,500.00 €
Description:	Co-organization of workshops, invitations to field visits and joint communication activities. Production of promotional material (Activity 2.1)
Award procedure:	LPRC is not subject to public procurement law. However, external contract procedures will respect the basic principles on which procurement standards are based, following Eu rules, national rules and internal rules of the organization. As such, we will give preference to best value or lowest price, promoting environmentally responsible purchasing and integrating social components whenever possible.
2026	
Budget:	4,500.00 €
Description:	Co-organization of workshops, invitations to field visits and joint communication activities. Production of promotional material (Activity 2.1)
Award procedure:	LPRC is not subject to public procurement law. However, external contract procedures will respect the basic principles on which procurement standards are based, following Eu rules, national rules and internal rules of the organization. As such, we will give preference to best value or lowest price, promoting environmentally responsible purchasing and integrating social components whenever possible.

4.7.8. Equipment costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	

2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.7.9. Infrastructures and works costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.8. Complementary information

4.8.1. Investment Title
4.8.2. Investment Budget
0.00 €
4.8.3. Technical description and justification
4.8.4. Investment requirements
4.8.5. Ownership and durability

4.0 Energía Bonita S. Coop.(-)

4.0.1 Partner Number:

3

4.0.2 Position in the partnership:

Partner

4.1.1 Department

4.1.1.1 Abbreviation:

-

4.1.1.2 Entity name:

Energía Bonita S. Coop.

4.1.1.3 Entity name in English:

4.1.1.4 Department name:

-

4.1.1.5 Organization type:

Small and medium enterprises

4.1.1.6 Entity legal status:

Not-for-profit private organization

4.1.1.7 Tax number:

F67655522

4.1.1.8 Website:

www.energiabonita.coop

4.1.1.9 Organization Size:

0

4.1.1.10 VAT recovery:

True

4.1.2. Location

4.1.2.1 Country:

Spain

4.1.2.2. NUTS II

Canarias

4.1.2.3. NUTS III

La Palma

4.1.2.4. City

Puntallana

4.1.2.5. Address

c/ Lomo el Cabo 1

4.1.3 Documentation

4.1.3.1. Vat statement

Vat statement_signed.pdf

4.1.3.2. Bank statement

4.1.3.2. Bank statement.rar

4.1.3.3. Project Partner declaration

4.1.3.3. Project Partner Declaration_signed.pdf

4.1.3.3. Project Partner declaration date

01/03/2023

4.1.3.5. State Aid declaration

4.1.3.5. State Aid declaration_signed.pdf

4.1.3.6 State Aid declaration date

02/03/2023

4.2.1 Contact person

4.2.1.1 Name:

Energía Bonita S. Coop.

4.2.1.2. Email:

info@energiabonita.es

4.2.1.3. Phone:

+34681608371

4.2.1.4. Address:

c/ Lomo el Cabo 1

4.2.1.5. Post code:

38714

4.2.1.6. City:

Puntallana

4.2.1.7. Country:

Spain

4.2.2. Legal representative

4.2.2.1. Name:

Nuria Albet Torres

4.2.2.2. Email:

nuria@lapalmarenovable.es

4.2.2.3. Phone:

+34681608371

4.2.2.4. Address:

c/ Lomo el Cabo 1

4.2.2.5. Post code:

38714

4.2.2.6. City:

Puntallana

4.2.2.7. Country:

Spain

4.2.2.8. Legal Representative declaration:

4.2.2.8. Legal Representative declaration_signed.pdf

4.2.2.9. Signature date document:

01-03-2023

4.2.3. Financial Manager

4.2.3.1. Name:

Nuria Albet Torres

4.2.3.2. Email:

nuria@lapalmarenovable.es

4.2.3.3. Phone:

+34681608371

4.2.3.4. Address:

c/ Lomo el Cabo 1

4.2.3.5. Post code:

38714

4.2.3.6. City:

Puntallana

4.2.3.7. Country:

Spain

4.3. Bank account

4.3.1. IBAN:

ES75 3076 0170 8627 7051 6728

4.3.2. SWIFT:

BCOESMM076

4.3.3. Bank:

Caja Siete

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

Energía Bonita is an energy community, a not-for-profit cooperative, so it was created to produce and consume renewable energy for its members, as well as other energy services. One of its goals is to help solve energy poverty issues in La Palma. It was promoted by La Palma Renewable (LPR), a not-for-profit association, with many years of experience in energy poverty. LPR and La Palma was selected as pilot island by the Clean Energy for EU Islands and since then it has a very close collaboration with Brussels and Madrid, as well as local administrations.

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

The organization is leading WP2, and involved in mainly energy poverty and participation/community related activities.

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

N/A

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

N/A

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

N/A

4.4.6. In the case of partners from outside the programme area: Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?

N/A

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

The cooperative has other incomes but not in the area of activities of this project.

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

Some of the services could be sold in the market, but considering that the goal is working with vulnerable families and energy poverty, it is a consumer sector that wouldn't be feasible.

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

Most of the activities will be carried out by this partner. Minor costs will be spent by external providers, mostly for external costs of activities related to workshop organization.

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

119,365.33 €

4.6.2. Total Costs

119,365.33 €

4.6.3. Funding amount (ERDF)

89,524.00 €

Co-financing rate
75.00 %
4.6.4. Partner contribution
29,841.33 €
4.6.5. Other Fundings
0.00 €
4.6.6. Budget spent outside Programme Area
0.00 €
Percentage between budget spent outside Programme Area and Total Eligible Budget
0.00 %

4.6.7. Origin of co-financing of the partner's contribution

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
Energía Bonita S. Coop. (-)	Not-for-profit private organization	29,841.33 €	25.00 %

4.7. Partner budget by budget line and year

4.7.1. Total Eligible Budget
119,365.33 €

4.7.2. Staff Costs – Calculation Method
Real costs staff and simplified costs office and travel

4.7.3. Preparation costs

2024	
Budget:	1,165.33 €

4.7.4. Staff costs

2024	
Budget:	28,000.00 €
2025	
Budget:	28,000.00 €
2026	
Budget:	28,000.00 €

4.7.5. Office and administrative expenditure

2024	
Budget:	4,200.00 €
2025	
Budget:	4,200.00 €
2026	
Budget:	4,200.00 €

4.7.6. Travel and accommodation costs

2024	
Budget:	4,200.00 €
2025	
Budget:	4,200.00 €
2026	
Budget:	4,200.00 €

4.7.7. External expertise and services costs

2024	
Budget:	3,000.00 €
Description:	Costs related to workshops organization
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration
2025	
Budget:	3,000.00 €
Description:	Costs related to workshops organization
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration
2026	
Budget:	3,000.00 €
Description:	Costs related to workshops organization
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration

4.7.8. Equipment costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €

Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.7.9. Infrastructures and works costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.8. Complementary information

4.8.1. Investment Title	
4.8.2. Investment Budget	0.00 €
4.8.3. Technical description and justification	
4.8.4. Investment requirements	
4.8.5. Ownership and durability	

4.0 Trinity College Dublin(School of Engineering)

4.0.1 Partner Number:	4
4.0.2 Position in the partnership:	

Partner**4.1.1 Department****4.1.1.1 Abbreviation:****TCD****4.1.1.2 Entity name:****Trinity College Dublin****4.1.1.3 Entity name in English:****4.1.1.4 Department name:****School of Engineering****4.1.1.5 Organization type:****Universities and higher education****4.1.1.6 Entity legal status:****Public body****4.1.1.7 Tax number:****2200007U****4.1.1.8 Website:****4.1.1.9 Organization Size:****Large organisation****4.1.1.10 VAT recovery:****True****4.1.2. Location****4.1.2.1 Country:****Ireland****4.1.2.2. NUTS II****Eastern and Midland****4.1.2.3. NUTS III****Dublin****4.1.2.4. City**

4.1.2.5. Address

Trinity College Dublin, College Green, Dublin 2.

4.1.3 Documentation

4.1.3.1. Vat statement

Darkwa_Vat statement TCD.pdf

4.1.3.2. Bank statement

Financial Identification Form TCD.pdf

4.1.3.3. Project Partner declaration

Darkwa_Project Partner declaration - SIGNED.pdf

4.1.3.3. Project Partner declaration date

02/03/2023

4.1.3.5. State Aid declaration

State Aid declaration TCD - SIGNED LD .pdf

4.1.3.6 State Aid declaration date

02/03/2023

4.2.1 Contact person

4.2.1.1 Name:

Mary Kerrigan

4.2.1.2. Email:

kerrigma@tcd.ie

4.2.1.3. Phone:

+353 1 896 1000

4.2.1.4. Address:

College Green, Dublin 2, Ireland

4.2.1.5. Post code:

n/a

4.2.1.6. City:

Dublin

4.2.1.7. Country:

Ireland

4.2.2. Legal representative

4.2.2.1. Name:

Mary Tracey

4.2.2.2. Email:

TRACEYM@tcd.ie

4.2.2.3. Phone:

+353 1 896 1000

4.2.2.4. Address:

College Green, Dublin 2, Ireland

4.2.2.5. Post code:

n/a

4.2.2.6. City:

Dublin

4.2.2.7. Country:

Ireland

4.2.2.8. Legal Representative declaration:

Darkwa_LEAR declaration - SIGNED LD + MT.pdf

4.2.2.9. Signature date document:

02-03-2023

4.2.3. Financial Manager

4.2.3.1. Name:

Elaine Sharkey

4.2.3.2. Email:

SHARKEE@tcd.ie

4.2.3.3. Phone:

+353 1 896 1000

4.2.3.4. Address:

College Green, Dublin 2, Ireland

4.2.3.5. Post code:

n/a

4.2.3.6. City:

Dublin

4.2.3.7. Country:

Ireland**4.3. Bank account****4.3.1. IBAN:****IE39BOFI90139421853025****4.3.2. SWIFT:****BOFIE2D****4.3.3. Bank:****Bank of Ireland****4.4. Partner motivation and contribution****4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?**

TCD brings its expertise in research and innovation, and impact measurement and assessment of diverse science and engineering projects to this project. With a diverse range of expertise within our university that this collaboration can access, long standing experience in technology development and the commercialisation of research and intellectual property, TCD seeks to contribute to ensuring the successful implementation and execution of this project.

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

Providing support to the team in Reviewing of the State of the Art, Needs Assessment and establishing the Potential and Integration of Hydropower energy generation in the selected contexts. This involves

- a. Establish the State-of-the-Art of Small-scale Micro Hydro power (SHP) technologies,
- b. Provide a situational analysis of implemented prototypes and pilots in the participating regions
- c. Develop a Needs Assessment for SHP in the chosen pilot regions and quantify the existing potential for SHP,
- d. Review and provide an assessment of the potential integration with other Renewable Energy Sources (RES) and Energy Storage Solutions in the region.

Providing expertise in the development of documents for the Management of legal requirements and the conducting of risk assessment and mitigation plans. This involves among other things (as deemed relevant):

- a. Creation of enabling policy instruments
- b. relevant policy guides and link and good practice inventory for participating countries
- c. Strategic plans for the future of the water industry in the selection regions
- d. A common methodology for monitoring of impacts of hydropower
- e. Analysis of concession practices for developing hydropower plants complemented with recommendations for improvement targeted at decision-makers

This will result in the following deliverables:

1. An analysis of national strategies for preservation of river ecosystems in line with the Water Framework Directive
2. Design and develop management frameworks

This is a collection of legal frameworks to be considered when planning and implementing SHP's in the selected regions.

3. Develop risk assessment frameworks

This is a draft document of risks to be considered when planning and implementing SHP's in the selected region

4. River basin management plan

This are draft river basin management plans that embody considerations of local, national, EU and international requirements

5. Develop Flood hazard and flood risk maps

This are draft Flood hazard and flood risk plans that embody considerations of local, national, EU and international requirements

6. Develop a strategic environmental assessment

This is a draft environmental assessment strategy with considerations of local, national, EU and international requirements

TCD will also develop a comparative assessment of the works in the pilot regions.

The following documents will be produced as a consequence of this comparative analyses

1. Handbook detailing innovative technologies for small hydropower plants with examples from the selected regions
2. Manual for small hydropower plant implementation including legal, technical and economic aspects
3. Manual on dynamic operation of hydro power plants with focus on flood prevention and desalination
4. Report from testing tools for evaluating hydropower potential of selected sub-basins and determining suitable river stretches for small hydropower plant development in the selected regions
5. Report on findings of the habitat/ecological quality assessment of relevant rivers
6. Report on sustainable surface water management including review of relevant national and implementation of EU directives

Finally TCD will contribute to the Determination of microhydro services and their commercial potential within the selected regions.

Micro hydro services document. This is a single document outlining required micro hydro services, their roles and responsibilities and commercial potential for the selected regions.

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

As Ireland's leading university, Trinity College Dublin has achieved major success over H2020, drawing down over €132 million in EU funding for research. Trinity researchers hold 44 of the highly prestigious ERC awards and 82 MSCA grants, including 4 COFUND fellowship programmes (which contribute to Ireland's research capacity by attracting excellent PhD and postdoctoral candidates to the country). This project will be housed in the School of Natural Sciences at Trinity College Dublin. It will be led by Dr Immanuel Darkwa, Assistant Professor in Innovation, Development and Economic Geography. Immanuel is also a Principal Investigator for an EIT Climate KIC project and an Environmental Policy Advisor.

Below are just a handful of the innovative, exciting and collaborative EU-funded projects to be found in this School.

1. SHARECITY

Lead Investigator: Prof. Anna Davies

Funding programme: ERC Consolidator Grant

Based: Geography, School of Natural Sciences

2. Connecting Nature

Lead Investigator: Prof. Marcus Collier

Funding programme: H2020 Smart and Sustainable Cities

Based: School of Natural Sciences and Trinity Business School

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

N/A

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

N/A

4.4.6. In the case of partners from outside the programme area:

Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?

N/A

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

310,032.52 €

4.6.2. Total Costs

310,032.52 €

4.6.3. Funding amount (ERDF)

232,524.39 €

Co-financing rate

75.00 %

4.6.4. Partner contribution

77,508.13 €

4.6.5. Other Fundings

0.00 €

4.6.6. Budget spent outside Programme Area

0.00 €

Percentage between budget spent outside Programme Area and Total Eligible Budget

0.00 %

4.6.7. Origin of co-financing of the partner's contribution

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
Trinity College Dublin (School of Engineering)	Public body	77,508.13 €	25.00 %

4.7. Partner budget by budget line and year**4.7.1. Total Eligible Budget****310,032.52 €****4.7.2. Staff Costs – Calculation Method****Real costs staff and simplified costs office and travel****4.7.3. Preparation costs****2024****Budget: 1,165.33 €****4.7.4. Staff costs****2024****Budget: 74,812.10 €****2025****Budget: 74,812.10 €****2026****Budget: 74,812.10 €****4.7.5. Office and administrative expenditure****2024****Budget: 11,221.82 €****2025****Budget: 11,221.82 €****2026****Budget: 11,221.82 €****4.7.6. Travel and accommodation costs****2024****Budget: 11,221.82 €**

2025	
Budget:	11,221.82 €
2026	
Budget:	11,221.82 €

4.7.7. External expertise and services costs

2024	
Budget:	4,499.97 €
Description:	Accounting & Audit Costs
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration
2025	
Budget:	4,500.00 €
Description:	Accounting & Audit Costs
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration
2026	
Budget:	4,500.00 €
Description:	Accounting & Audit Costs
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration

4.7.8. Equipment costs

2024	
Budget:	1,200.00 €
Description:	Laptop, recording device and software licenses
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration
2025	
Budget:	1,200.00 €
Description:	Laptop, and software licenses
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration
2026	
Budget:	1,200.00 €
Description:	Laptop, and software licenses
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration

4.7.9. Infrastructures and works costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	

2025

Budget:	0.00 €
Description:	
Award procedure:	

2026

Budget:	0.00 €
Description:	
Award procedure:	

4.8. Complementary information

4.8.1. Investment Title

4.8.2. Investment Budget

0.00 €

4.8.3. Technical description and justification

4.8.4. Investment requirements

4.8.5. Ownership and durability

4.0 Laboratório Nacional de Energia e Geologia, I.P.(Laboratório Nacional de Energia e Geologia, I.P.)

4.0.1 Partner Number:

5

4.0.2 Position in the partnership:

Partner

4.1.1 Department

4.1.1.1 Abbreviation:

LNEG

4.1.1.2 Entity name:

Laboratório Nacional de Energia e Geologia, I.P.

4.1.1.3 Entity name in English:

National Laboratory for Energy and Geology, P.I.

4.1.1.4 Department name:

Laboratório Nacional de Energia e Geologia, I.P.

4.1.1.5 Organization type:

Research and innovation organisations

4.1.1.6 Entity legal status:

Public body

4.1.1.7 Tax number:

508424780

4.1.1.8 Website:

www.lneg.pt

4.1.1.9 Organization Size:

LNEG

4.1.1.10 VAT recovery:

True

4.1.2. Location

4.1.2.1 Country:

Portugal

4.1.2.2. NUTS II

Área Metropolitana de Lisboa

4.1.2.3. NUTS III

Área Metropolitana de Lisboa

4.1.2.4. City

Lisboa

4.1.2.5. Address

Estrada do Paço do Lumiar, 22, 1649-038, Lisboa

4.1.3 Documentation

4.1.3.1. Vat statement

VAT Statement.pdf

4.1.3.2. Bank statement

IsoMicroHydro - Financial Identification_LNEG.pdf

4.1.3.3. Project Partner declaration

Project Partner Declaration.pdf

4.1.3.3. Project Partner declaration date

02/03/2023

4.1.3.5. State Aid declaration

State Aid information.pdf

4.1.3.6 State Aid declaration date

02/03/2023

4.2.1 Contact person

4.2.1.1 Name:

Teresa Maria Veloso Nunes Simões Esteves

4.2.1.2. Email:

teresa.simoes@lneg.pt

4.2.1.3. Phone:

+351210924775

4.2.1.4. Address:

Estrada do Paço do Lumiar, 22

4.2.1.5. Post code:

1649-038

4.2.1.6. City:

Lisboa

4.2.1.7. Country:

Portugal

4.2.2. Legal representative

4.2.2.1. Name:

Maria Teresa Costa Pereira da Silva Ponce de Leão

4.2.2.2. Email:

presidencia@lneg.pt

4.2.2.3. Phone:

+351210924609

4.2.2.4. Address:

Estrada da Portela – Bairro do Zambujal – Apartado 7586 - Alfragide

4.2.2.5. Post code:

2610-999

4.2.2.6. City:

Amadora

4.2.2.7. Country:

Portugal

4.2.2.8. Legal Representative declaration:

4.2.2.8.rar

4.2.2.9. Signature date document:

02-03-2023

4.2.3. Financial Manager

4.2.3.1. Name:

Ana Cláudia Feio Ferro de Carvalho

4.2.3.2. Email:

ana.claudia@lneg.pt

4.2.3.3. Phone:

+351210924700

4.2.3.4. Address:

Estrada da Portela – Bairro do Zambujal – Apartado 7586 - Alfragide

4.2.3.5. Post code:

2610-999

4.2.3.6. City:

Amadora

4.2.3.7. Country:

Portugal

4.3. Bank account

4.3.1. IBAN:

PT50078101120112001305957

4.3.2. SWIFT:

IGCPPTPL

4.3.3. Bank:

Agência de Gestão da Tesouraria e da Dívida Pública - IGCP, E.P.E.

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

The LNEG team participating in this project has a strong background in the area of renewable energy and its integration into the electrical system. Specifically, LNEG will contribute to the identification of other technological solutions based on vRES technologies as wind, wave or solar PV systems with the use of storage. LNEG team has been developing R,D&D projects in the area of Renewable Energies since the first State Laboratory was set up in Portugal with this mission in the mid-1980s. Throughout the years, LNEG has participated in the most relevant projects in the areas of Wind Energy, Wave Energy, and Solar Thermal and Photovoltaic Energy. Since its creation, LNEG has made an instrumental contribution to the identification and characterization of renewable energy potential, working with the national business community, technologically supporting the development of projects and constituting as a facilitator in the dissemination of renewable technologies in Portugal.

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

LNEG will have a comprehensive contribution to the project, supporting the identification of the potential for integrating wind and photovoltaic solar technologies in the developing solutions. LNEG will also support dissemination and stakeholder engagement activities. The main activities where LNEG will contribute are:

Activity 1.4. Review and assessment of integration with other Renewable Energy Sources, Energy Storage Solutions and the Grid

Activity 2.2. Involving Social actors to reduce energy poverty

Activity 2.4. Raising public awareness on renewables solutions in Atlantic isolated areas

Activity 3.3. Development of technical solutions for the pilots

Activity 3.4. Implementation

Activity 4.1. Comparative assessment of the pilot regions

Activity 4.3. Define policy recommendations and implementation guidelines

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

LNEG carried out several R&D Projects with national and international partners as also Technical assistant to the Industry in order to support the sustainable development of the Portuguese economy. Regarding EU-funded project LNEG already participated in several projects as partner or leader of the project, for instance:

PVP4Grid H2020 - Development of innovative self-consumption and aggregation concepts for PV Prosumers to improve grid load and increase market value of PV.

H2020 Prosumers4Grid - Development of innovative self-consumption and aggregation concepts for PV Prosumers to improve grid load and increase market value of PV

ESFRI WINDSCANNER - The WindScanner facility is a laser-based wind measurement system that can generate detailed 3D maps of wind conditions above and from inside a wind farm covering several square kilometers.

EU- IRPWind The IRPWIND project was an integrated research programme that combines strategic wind energy research projects and support activities, with the aim of leveraging the long term European research potential, to accelerate the route to market for breakthrough innovations, which will ultimately translate into securing the demanding European ambitions for wind energy generation in 2050.

ESFRI EU-SOLARIS- The project aims to design a future infrastructure in the form of a legal entity called EUSOLARIS, that will rely on a sustainable financial mechanism over time, moreover, a structured organization that brings together the resources and infrastructure of R&D of its members, and a shared management that acts as a single point of access to European solar thermal research for the rest of the world.

Build-UP SKILLS FORESEE - puts into practice the operational, supporting and structural measures identified in the Training Roadmap 2014-2020, under Build Up Skills – Portugal, Pillar I, contributing to a building sector craftsmen with competences and skills on energy efficiency (EE) and renewable energy sources (RES) and to meet the national building sector energy targets set for 2020, overcoming barriers and skill gaps in the different professions.

LEAP – RE LEAP-RE – Long-Term Joint EU-AU Research and Innovation Partnership on Renewable Energy (H2020) - the main objectives of the project are: To create a long-term partnership between African and European entities in the field of Renewable Energies; and; until 2025 - support collaborative Research and Innovation projects, and develop innovative projects in the area of Renewable Energies.

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

N/A

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

N/A

**4.4.6. In the case of partners from outside the programme area:
Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?**

N/A

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

103,490.75 €

4.6.2. Total Costs

103,490.75 €

4.6.3. Funding amount (ERDF)

77,618.06 €

Co-financing rate

75.00 %

4.6.4. Partner contribution

25,872.69 €

4.6.5. Other Fundings

0.00 €

4.6.6. Budget spent outside Programme Area

0.00 €

Percentage between budget spent outside Programme Area and Total Eligible Budget

0.00 %

4.6.7. Origin of co-financing of the partner's contribution

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
Laboratório Nacional de Energia e Geologia, I.P. (Unidade de Energias Renováveis e Eficiência Energética)	Public body	25,872.69 €	25.00 %

4.7. Partner budget by budget line and year

4.7.1. Total Eligible Budget

103,490.75 €

4.7.2. Staff Costs – Calculation Method

Real costs staff and simplified costs office and travel

4.7.3. Preparation costs

2024	
Budget:	1,165.33 €

4.7.4. Staff costs

2024	
Budget:	23,416.78 €
2025	
Budget:	23,416.78 €
2026	
Budget:	23,416.78 €

4.7.5. Office and administrative expenditure

2024	
Budget:	3,512.52 €
2025	
Budget:	3,512.52 €
2026	
Budget:	3,512.52 €

4.7.6. Travel and accommodation costs

2024	
Budget:	3,512.52 €
2025	
Budget:	3,512.52 €
2026	
Budget:	3,512.52 €

4.7.7. External expertise and services costs

2024	
Budget:	2,500.00 €
Description:	Participation in one conference on the project topic. Audit year 1
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration
2025	
Budget:	3,000.00 €
Description:	Participation in one conference on the project topic. Paper fee for open access publication. Audit year 2

Award procedure:	Award procedure will follow the national and regional usual rules for the public administration
2026	
Budget:	2,999.96 €
Description:	Participation in one conference on the project topic. Paper fee for open access publication. Audit year 3
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration

4.7.8. Equipment costs

2024	
Budget:	2,500.00 €
Description:	Software licences for solar and wind resource assessment software.
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.7.9. Infrastructures and works costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.8. Complementary information

4.8.1. Investment Title

4.8.2. Investment Budget

0.00 €

4.8.3. Technical description and justification

4.8.4. Investment requirements

4.8.5. Ownership and durability

4.0 ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação(EELab - Enterprise Engineering Lab)

4.0.1 Partner Number:

6

4.0.2 Position in the partnership:

Partner

4.1.1 Department

4.1.1.1 Abbreviation:

EELab

4.1.1.2 Entity name:

ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação

4.1.1.3 Entity name in English:

Regional Agency for the Development of Research, Technology and Innovation

4.1.1.4 Department name:

EELab - Enterprise Engineering Lab

4.1.1.5 Organization type:

Research and innovation organisations

4.1.1.6 Entity legal status:

Not-for-profit private organization

4.1.1.7 Tax number:

511060408

4.1.1.8 Website:

www.arditi.pt

4.1.1.9 Organization Size:

Medium

4.1.1.10 VAT recovery:

False

4.1.2. Location

4.1.2.1 Country:

Portugal

4.1.2.2. NUTS II

Região Autónoma da Madeira

4.1.2.3. NUTS III

Região Autónoma da Madeira

4.1.2.4. City

Funchal

4.1.2.5. Address

Edifício Madeira Tecnopolo, Piso 2, Caminho da Penteada, 9020-105 Funchal

4.1.3 Documentation

4.1.3.1. Vat statement

4.1.3.1. Vat statement_signed-1_signed.pdf

4.1.3.2. Bank statement

Bank statement.pdf

4.1.3.3. Project Partner declaration

4.1.3.3. Project Partner Declaration_signed.pdf

4.1.3.3. Project Partner declaration date

02/03/2023

4.1.3.5. State Aid declaration

4.1.3.5. State Aid declaration_signed-1_signed.pdf

4.1.3.6 State Aid declaration date

02/03/2023

4.2.1 Contact person

4.2.1.1 Name:

Clemente Aguiar

4.2.1.2. Email:

clemente.aguiar@arditi.pt

4.2.1.3. Phone:

+351291721007

4.2.1.4. Address:

Caminho da Penteada. Madeira Tecnopolo, piso 2

4.2.1.5. Post code:

9020-105

4.2.1.6. City:

Funchal

4.2.1.7. Country:

Portugal

4.2.2. Legal representative

4.2.2.1. Name:

Clemente Aguiar

4.2.2.2. Email:

clemente.aguiar@arditi.pt

4.2.2.3. Phone:

+351291721007

4.2.2.4. Address:

Caminho da Penteada. Madeira Tecnopolo, piso 2

4.2.2.5. Post code:

9020-105

4.2.2.6. City:

Funchal

4.2.2.7. Country:

Portugal

4.2.2.8. Legal Representative declaration:

4.2.2.8. Legal Representative declaration_signed_signed.pdf

4.2.2.9. Signature date document:

02-03-2023

4.2.3. Financial Manager

4.2.3.1. Name:

Virginia Catanho

4.2.3.2. Email:

virginia.catanho@arditi.pt

4.2.3.3. Phone:

+351291721007

4.2.3.4. Address:

Caminho da Penteada. Madeira Tecnopolo, piso 2

4.2.3.5. Post code:

9020-105

4.2.3.6. City:

Funchal

4.2.3.7. Country:

Portugal

4.3. Bank account

4.3.1. IBAN:

PT50001800080027387902055

4.3.2. SWIFT:

TOTAPTPL

4.3.3. Bank:

SANTANDER TOTTA

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

ARDITI brings experience in energy related projects and will contribute in the networking with other initiatives of interest for the IsoMicroHydro project. ARDITI is leading Madeira's European Digital Innovation Hub - the SIH - Smart Islands Hub - which is part of the European Network of DIHs. One of SIH's main focus areas is energy with focus on the definition, provision, and promotion of energy related activities.

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

ARDITI will participate in the studies regarding the microhydro technology state of art, needs, integration possibilities and assessment of current implemented pilots with our experts as well as promote the connection and share of relevant knowledge between the IsoMicroHydro project with, on the other side, the partners of the hub specialised in the energy sector and the European network of hubs in this area, which will largely benefit the IsoMicroHydro project implementation.

ARDITI will also participate in the risk assessment and legal requirements of the pilots as well as support their detailing, development and implementation.

Finally ARDITI will also assist with the devising of policy recommendations and implementation guidelines.

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

ARDITI is the Regional Agency for the Development of Research, Technology and Innovation in Madeira. It was established in 2013 with the aim of supporting research and experimental development activities, the promotion of technological diffusion, promotes scientific and technological training and contributes to the modernisation and development of the Autonomous Region of Madeira (RAM). ARDITI's activities are aligned with the economic and social development plan of Madeira, ensuring the sustainability of economic growth and fostering qualified employment in the region.

ARDITI is involved in several European projects and has extensive project management experience complying with a variety of regulations and guidelines, such as the European Union's financial rules and reporting requirements.

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

N/A

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

N/A

**4.4.6. In the case of partners from outside the programme area:
Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?**

N/A

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

237,528.50 €

4.6.2. Total Costs

237,528.50 €

4.6.3. Funding amount (ERDF)

178,146.37 €

Co-financing rate

75.00 %

4.6.4. Partner contribution

59,382.13 €

4.6.5. Other Fundings

0.00 €

4.6.6. Budget spent outside Programme Area

0.00 €

Percentage between budget spent outside Programme Area and Total Eligible Budget

0.00 %

4.6.7. Origin of co-financing of the partner's contribution

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação (EELab - Enterprise Engineering Lab)		59,382.13 €	25.00 %

4.7. Partner budget by budget line and year

4.7.1. Total Eligible Budget

237,528.50 €

4.7.2. Staff Costs – Calculation Method

Real costs staff and simplified costs office and travel

4.7.3. Preparation costs

2024

Budget: 3,496.00 €

4.7.4. Staff costs

2024

Budget: 56,675.00 €

2025

Budget: 56,675.00 €

2026

Budget: 56,675.00 €

4.7.5. Office and administrative expenditure

2024

Budget: 8,501.25 €

2025

Budget: 8,501.25 €

2026

Budget: 8,501.25 €

4.7.6. Travel and accommodation costs

2024

Budget:	8,501.25 €
2025	
Budget:	8,501.25 €
2026	
Budget:	8,501.25 €

4.7.7. External expertise and services costs

2024	
Budget:	3,000.00 €
Description:	Organization of event for stakeholder engagement, coffee breaks, consumables, etc. (1250,00€); Audit expenses (1750,00€)
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration
2025	
Budget:	3,000.00 €
Description:	Organization of event for stakeholder engagement, coffee breaks, consumables, etc. (1250,00€); Audit expenses (1750,00€)
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration
2026	
Budget:	3,000.00 €
Description:	Organization of event for stakeholder engagement, coffee breaks, consumables, etc. (1250,00€); Audit expenses (1750,00€)
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration

4.7.8. Equipment costs

2024	
Budget:	4,000.00 €
Description:	2 laptops for staff hired for the project
Award procedure:	Award procedure will follow the national and regional usual rules for the public administration
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.7.9. Infrastructures and works costs

2024

Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.8. Complementary information

4.8.1. Investment Title
4.8.2. Investment Budget
0.00 €
4.8.3. Technical description and justification
4.8.4. Investment requirements
4.8.5. Ownership and durability

4.0 Pump-Ille-Up(ille-et-vilaine)

4.0.1 Partner Number:
7
4.0.2 Position in the partnership:
Partner

4.1.1 Department

4.1.1.1 Abbreviation:
PIU
4.1.1.2 Entity name:
Pump-Ille-Up
4.1.1.3 Entity name in English:

Pump-Ille-Up

4.1.1.4 Department name:

ille-et-vilaine

4.1.1.5 Organization type:

Small and medium enterprises

4.1.1.6 Entity legal status:

Profit-making private organization

4.1.1.7 Tax number:

FR57919384057

4.1.1.8 Website:

www.pump-ille-up.com

4.1.1.9 Organization Size:

1

4.1.1.10 VAT recovery:

True

4.1.2. Location

4.1.2.1 Country:

France

4.1.2.2. NUTS II

Bretagne

4.1.2.3. NUTS III

Ille-et-Vilaine

4.1.2.4. City

Rennes

4.1.2.5. Address

91 Bd de la Duchesse Anne

4.1.3 Documentation

4.1.3.1. Vat statement

4.1.3.1. Vat statement.pdf

4.1.3.2. Bank statement

4.1.3.2. PIU.zip

4.1.3.3. Project Partner declaration

4.1.3.3. Project Partner Declaration.pdf

4.1.3.3. Project Partner declaration date

03/03/2023

4.1.3.5. State Aid declaration

4.1.3.5. State Aid declaration.pdf

4.1.3.6 State Aid declaration date

03/03/2023

4.2.1 Contact person

4.2.1.1 Name:

Erik Zilliox

4.2.1.2. Email:

erik.zilliox@pump-ille-up.com

4.2.1.3. Phone:

+33663711959

4.2.1.4. Address:

91 Bd de la Duchesse Anne

4.2.1.5. Post code:

35700

4.2.1.6. City:

Rennes

4.2.1.7. Country:

France

4.2.2. Legal representative

4.2.2.1. Name:

Erik Zilliox

4.2.2.2. Email:

erik.zilliox@pump-ille-up.com

4.2.2.3. Phone:

+33663711959

4.2.2.4. Address:

91 Bd de la Duchesse Anne

4.2.2.5. Post code:

35700

4.2.2.6. City:

Rennes

4.2.2.7. Country:

France

4.2.2.8. Legal Representative declaration:

4.2.2.8. Legal Representative declaration.pdf

4.2.2.9. Signature date document:

03-03-2023

4.2.3. Financial Manager

4.2.3.1. Name:

Erik Zilliox

4.2.3.2. Email:

erik.zilliox@pump-ille-up.com

4.2.3.3. Phone:

+33663711959

4.2.3.4. Address:

91 Bd de la Duchesse Anne

4.2.3.5. Post code:

35700

4.2.3.6. City:

Rennes

4.2.3.7. Country:

France

4.3. Bank account

4.3.1. IBAN:

FR76 1558 9351 9708 7638 0344 062

4.3.2. SWIFT:

CMBRFR2B

4.3.3. Bank:

Credit Mutuel de Bretagne

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

Hydropower skills : feasibility studies made for turbinning flow rates of water network. Micro-turbine (more specifically, pump used as a turbine) can replace pressure reducing valve and recover energy.
Management of the work to build a pilot site in Perros Guirec, in Brittany, through EERES4WATER.
Project management in health, environment, energy (financial, administrative management).
Usual collaboration with international partners and cooperative work with them.

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

Working on case studies, feasibility studies and development of new innovative equipment solutions.
More specifically participation in the following activities:
Activity 1.1 Review current SoA of microhydro technology;
Activity 1.3. Study of the needs and the microhydro potential of the pilot areas;
Activity 1.4. Review and assessment of integration with other Renewable Energy Sources, Energy Storage Solutions and the Grid;
Activity 2.2. Involving Social actors to reduce energy poverty;
Activity 2.4. Raising public awareness on renewables solutions in atlantic isolated areas;
Activity 3.1. Management of legal requirements and risk assessment;
Activity 3.2. Detailed use-case specification;
Activity 3.3. Development of technical solutions for the pilots;
Activity 3.4. Implementation;
Activity 4.1. Comparative assessment of the pilot regions;
Activity 4.2. Determination of microhydro services and their commercial potential;
Activity 4.3. Define policy recommendations and implementation guidelines;

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

We were involved in EERES4WATER project (Interreg Atlantic) specialized in the Energy-Water Nexus, which aimed to provide Atlantic Area targeted stakeholders with the tools and instruments needed to overcome the Nexus challenges, by promoting the direct use of renewable energy sources and energy efficiency in the water cycle, influencing related policies and introducing new processes and technologies. Obtained experience will be highly valuable for this current Consortium.

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

N/A

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

N/A

4.4.6. In the case of partners from outside the programme area: Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?

N/A

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

210,465.03 €

4.6.2. Total Costs

210,465.03 €

4.6.3. Funding amount (ERDF)

157,848.77 €

Co-financing rate

75.00 %

4.6.4. Partner contribution

52,616.26 €

4.6.5. Other Fundings

0.00 €

4.6.6. Budget spent outside Programme Area

0.00 €

Percentage between budget spent outside Programme Area and Total Eligible Budget

0.00 %

4.6.7. Origin of co-financing of the partner's contribution

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
Pump-Ille-Up(ille-et-vilaine)	Public body	52,616.26 €	25.00 %

4.7. Partner budget by budget line and year

4.7.1. Total Eligible Budget

210,465.03 €

4.7.2. Staff Costs – Calculation Method

Real costs staff and simplified costs office and travel

4.7.3. Preparation costs

2024

Budget: 1,165.33 €

4.7.4. Staff costs

2024

Budget: 48,000.00 €

2025

Budget: 42,000.00 €

2026

Budget: 36,000.00 €

4.7.5. Office and administrative expenditure

2024	
Budget:	7,200.00 €
2025	
Budget:	6,300.00 €
2026	
Budget:	5,400.00 €

4.7.6. Travel and accommodation costs

2024	
Budget:	7,200.00 €
2025	
Budget:	6,300.00 €
2026	
Budget:	5,400.00 €

4.7.7. External expertise and services costs

2024	
Budget:	15,499.70 €
Description:	Lab work on ram pump system to be more efficient / FLC / help on new renewable energy system for isolated area
Award procedure:	The principles of procurement contract will be observed, so that Pump-Ille-Up will demonstrate the efficient use of public funds. Or depending the amount of the contract, 3 quotes will be asked .
2025	
Budget:	17,500.00 €
Description:	Lab work on ram pump system to be more efficient / FLC / help on new renewable energy system for isolated area
Award procedure:	The principles of procurement contract will be observed, so that Pump-Ille-Up will demonstrate the efficient use of public funds. Or depending the amount of the contract, 3 quotes will be asked .
2026	
Budget:	5,000.00 €
Description:	FLC / communication
Award procedure:	3 quotes will be asked.

4.7.8. Equipment costs

2024	
Budget:	7,500.00 €

Description:	Ram pump
Award procedure:	The principles of procurement contract will be observed, so that Pump-Ille-Up will demonstrate the efficient use of public funds. Or depending the amount of the contract, 3 quotes will be asked .
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.7.9. Infrastructures and works costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.8. Complementary information

4.8.1. Investment Title
4.8.2. Investment Budget
0.00 €
4.8.3. Technical description and justification
4.8.4. Investment requirements
4.8.5. Ownership and durability

4.0 Trisolaris Advanced Technologies(TRISOLARIS ADVANCED TECHNOLOGIES, LDA)

4.0.1 Partner Number:

8

4.0.2 Position in the partnership:

Partner

4.1.1 Department

4.1.1.1 Abbreviation:

Management

4.1.1.2 Entity name:

Trisolaris Advanced Technologies

4.1.1.3 Entity name in English:

Trisolaris Advanced Technologies

4.1.1.4 Department name:

TRISOLARIS ADVANCED TECHNOLOGIES, LDA

4.1.1.5 Organization type:

Small and medium enterprises

4.1.1.6 Entity legal status:

Profit-making private organization

4.1.1.7 Tax number:

516457268

4.1.1.8 Website:

www.trisolaris.com

4.1.1.9 Organization Size:

4-10

4.1.1.10 VAT recovery:

True

4.1.2. Location

4.1.2.1 Country:

Portugal

4.1.2.2. NUTS II

Região Autónoma dos Açores

4.1.2.3. NUTS III

Região Autónoma dos Açores

4.1.2.4. City

LAGOA (SÃO MIGUEL)

4.1.2.5. Address

Rua Tecnologia K-Epsilon, nº 2, Rosário

4.1.3 Documentation

4.1.3.1. Vat statement

4.1.3.1. Vat statement_TRISOLARIS_signed.pdf

4.1.3.2. Bank statement

Bank statement + Iban.pdf

4.1.3.3. Project Partner declaration

4.1.3.3. Project Partner Declaration_TRISOLARIS_signed.pdf

4.1.3.3. Project Partner declaration date

27/02/2023

4.1.3.5. State Aid declaration

4.1.3.5. State Aid declaration_TRISOLARIS_signed.pdf

4.1.3.6 State Aid declaration date

27/02/2023

4.2.1 Contact person

4.2.1.1 Name:

Marta Vergílio

4.2.1.2. Email:

mvergilio@trisolaris.com

4.2.1.3. Phone:

+351916002635

4.2.1.4. Address:

Rua da Tecnologia K – Épsilon N.2

4.2.1.5. Post code:

9560-421

4.2.1.6. City:

Lagoa

4.2.1.7. Country:

Portugal

4.2.2. Legal representative

4.2.2.1. Name:

Natália Susana de Almeida e Silva

4.2.2.2. Email:

nsilva@trisolaris.com

4.2.2.3. Phone:

+351963348022

4.2.2.4. Address:

Rua da Tecnologia K – Épsilon N.2

4.2.2.5. Post code:

9560-421

4.2.2.6. City:

Lagoa

4.2.2.7. Country:

Portugal

4.2.2.8. Legal Representative declaration:

4.2.2.8.pdf

4.2.2.9. Signature date document:

27-02-2023

4.2.3. Financial Manager

4.2.3.1. Name:

Natália Susana de Almeida e Silva

4.2.3.2. Email:

nsilva@trisolaris.com

4.2.3.3. Phone:

+351963348022

4.2.3.4. Address:

Rua da Tecnologia K – Épsilon N.2

4.2.3.5. Post code:

9560-421

4.2.3.6. City:

Lagoa

4.2.3.7. Country:

Portugal

4.3. Bank account

4.3.1. IBAN:

PT50001000005943842000156

4.3.2. SWIFT:

BBPIPTPL

4.3.3. Bank:

Banco BPI, S.A.

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

Trisolaris Advanced Technologies, Lda., (TRISOLARIS) is an SME for small-scale manufacture of advanced hardware and robotic components using novel materials and out-of-the-box solutions to address customer requirements. They design, produce, and commercialise products and services for niche markets, simultaneously satisfying customer needs with solutions that may not yet exist. Their primary mission is to increase advanced technologies, such as those currently used in production and storage of renewable energies, space or military engineering, and deliver practical solutions for commercialisation in civil life. This concerns the development and commercialisation of complete systems and modules for robotics, surveying and monitoring systems designed for terrestrial and marine environments, technologies for renewable energy and raw materials development. This line of work and our longer-term objective includes R+D+I and subsequent commercialisation of micro-robotic systems, drones, micro-satellites, multi-purpose autonomous vehicles, novel propulsion systems and engineering solutions designed to support future infrastructures. TRISOLARIS is also a partner of the Azores Digital Innovation Hub (AzDIH), which recently received the Seal of Excellence. The AzDIH is aligned with the Research and Innovation Strategy for Smart Specialisation (RIS3) of the Azores and supports SMEs in digitisation, creating a favourable and vibrant environment for technological development and experimentation, leading to a natural Digital Transformation and Transition of the Azorean Economy.

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

TRISOLARIS will be involved in all WPs, with higher contribution to the technological activities and implementing the activities in the Azores region.

Under WP1, TRISOLARIS will mainly share technical knowledge and expertise on the state of the art of renewables and on the Azores contextualization to support the study of the needs and the IsoMicroHydro potential in the Azores. Besides contributing to the networking with other projects and initiatives, under WP2, TRISOLARIS will be mainly responsible for the implementation of stakeholder engagement and raising awareness in the Azores. Under WP3, TRISOLARIS will contribute to develop technical solutions for the pilots and will be responsible for the activities' implementation in the Azores region. TRISOLARIS will also contribute for the comparative assessment of the pilots, under WP4, and contribute for the exploitation of the project results with a commercial perspective after the project lifetime. Also integrated in WP4, TRISOLARIS will lead the implementation of Activity 4.3, which will provide policy recommendations and implementation guidelines.

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

TRISOLARIS is currently partner in projects funded by different EU programmes:

- INCORE (Innovation Capacity Building for Higher Education in Europe's Outermost Regions), funded by EIT InnoEnergy – INCORE boosts innovation and entrepreneurial capacity in Higher Education Institutions (HEIs) from Europe's Outermost Regions. The project will improve the framework conditions for Small and Medium Enterprises (SMEs, in particular high-tech start-ups) and universities to cooperate and co-create new value, businesses, products and services. The actions will substantially increase the entrepreneurial capacity of the participating universities.
- AzDIH (Azores Digital Innovation Hub on Tourism and Sustainability), funded by Portuguese Recovery and Resilience Plan – AzDIH is a partnership specialized in business digitalization, providing infrastructure, resources, and knowledge for the digital transformation of companies and public institutions. AzDIH will deliver several digitalization-oriented services, as well as monitor the impact on the target groups, categorized in the domains of test before investing, support to find investments, training and digital skills, and ecosystem and networking.
- AIRSHIP (Autonomous Flying Ships for Inter-island and Inland Waters Transport), funded by Horizon Europe – AIRSHIP envisions an innovative use of flying ships for transportation, by studying and developing new technologies in zero-emission power, on-board AI and in automatic flight control that overcome the challenging technical problems that flying in ground effect poses, and laying the foundations of a new class of fully electrical unmanned aircraft system that brings together speed, flexibility and energy efficiency.
- SEAWINGS (Sea/Air Interphasic Wing-In-Ground Effect Autonomous Drones), funded by European Defense Fund – SEAWINGS will develop a new class of military surveillance drones to operate in the sea/air interface giving rise to a new type of unmanned craft, Unmanned WingWing-in -Ground Vehicles, capable of very high payloads, inexpensive, long-range that do not require infrastructure or launch vehicle for departure and landing.

TRISOLARIS' team has a strong background in managing and coordinating EU (co)funded projects in different thematic areas, including Horizon 2020, Interreg, Digital Europe Programme and different Call for Proposals, and will actively contribute with their knowledge and experience towards the IsoMicroHydro project.

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

N/A

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

N/A

4.4.6. In the case of partners from outside the programme area: Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?

N/A

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

205,275.58 €

4.6.2. Total Costs

205,275.58 €

4.6.3. Funding amount (ERDF)

153,956.68 €

Co-financing rate

75.00 %

4.6.4. Partner contribution

51,318.90 €

4.6.5. Other Fundings**0.00 €****4.6.6. Budget spent outside Programme Area****0.00 €****Percentage between budget spent outside Programme Area and Total Eligible Budget****0.00 %****4.6.7. Origin of co-financing of the partner's contribution**

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
Trisolaris Advanced Technologies (Management)	Profit-making private organization	51,318.90 €	25.00 %

4.7. Partner budget by budget line and year**4.7.1. Total Eligible Budget****205,275.58 €****4.7.2. Staff Costs – Calculation Method****Real costs staff and simplified costs office and travel****4.7.3. Preparation costs****2024****Budget: 1,165.33 €****4.7.4. Staff costs****2024****Budget: 45,797.50 €****2025****Budget: 45,797.50 €****2026****Budget: 45,797.50 €****4.7.5. Office and administrative expenditure****2024****Budget: 6,869.63 €****2025**

Budget:	6,869.63 €
2026	
Budget:	6,869.63 €

4.7.6. Travel and accommodation costs

2024	
Budget:	6,869.63 €
2025	
Budget:	6,869.63 €
2026	
Budget:	6,869.63 €

4.7.7. External expertise and services costs

2024	
Budget:	8,000.00 €
Description:	Organization of events for stakeholder engagement, including venue, coffee breaks, consumables, etc. (5000,00€); Audit expenses (3000,00€; 2 audits per year)
Award procedure:	Award procedure will follow the national and regional rules for the public procurement
2025	
Budget:	8,000.00 €
Description:	Organization of events for stakeholder engagement, including venue, coffee breaks, consumables, etc. (5000,00€); Audit expenses (3000,00€; 2 audits per year)
Award procedure:	Award procedure will follow the national and regional rules for the public procurement
2026	
Budget:	8,000.00 €
Description:	Organization of events for stakeholder engagement, including venue, coffee breaks, consumables, etc. (5000,00€); Audit expenses (3000,00€; 2 audits per year)
Award procedure:	Award procedure will follow the national and regional rules for the public procurement

4.7.8. Equipment costs

2024	
Budget:	1,499.97 €
Description:	One computer for technical work
Award procedure:	Award procedure will follow the national and regional rules for the public procurement
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	

Budget:	0.00 €
Description:	
Award procedure:	

4.7.9. Infrastructures and works costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.8. Complementary information

4.8.1. Investment Title
4.8.2. Investment Budget
0.00 €
4.8.3. Technical description and justification
4.8.4. Investment requirements
4.8.5. Ownership and durability

4.0 Gobierno de Navarra(Departamento de Desarrollo Económico y Empresarial)

4.0.1 Partner Number:
9
4.0.2 Position in the partnership:
Partner

4.1.1 Department

4.1.1.1 Abbreviation:

DIEE

4.1.1.2 Entity name:

Gobierno de Navarra

4.1.1.3 Entity name in English:

Government of Navarra

4.1.1.4 Department name:

Departamento de Desarrollo Económico y Empresarial

4.1.1.5 Organization type:

Regional public organisations

4.1.1.6 Entity legal status:

Public body

4.1.1.7 Tax number:

S3100000C

4.1.1.8 Website:

<https://www.navarra.es/es/inicio>

4.1.1.9 Organization Size:

medium-size

4.1.1.10 VAT recovery:

False

4.1.2. Location

4.1.2.1 Country:

Spain

4.1.2.2. NUTS II

Comunidad Foral de Navarra

4.1.2.3. NUTS III

Navarra

4.1.2.4. City

Iruña / Pamplona

4.1.2.5. Address

Parque Tomás Caballero 1, Edificio "Fuente del Príncipe II"

4.1.3 Documentation

4.1.3.1. Vat statement

VAT Statement -Navarra.fdo.pdf

4.1.3.2. Bank statement

Bank statement- Navarra.pdf

4.1.3.3. Project Partner declaration

Project Partner Declaration_FDO.pdf

4.1.3.3. Project Partner declaration date

02/03/2023

4.1.3.5. State Aid declaration

State Aid Declaration-Navarra.fdo.pdf

4.1.3.6 State Aid declaration date

02/03/2023

4.2.1 Contact person

4.2.1.1 Name:

Arantxa Goikoetxea Irigoien

4.2.1.2. Email:

agoikoei@navarra.es

4.2.1.3. Phone:

+34848424961

4.2.1.4. Address:

Parque Tomás Caballero , 5º

4.2.1.5. Post code:

31005

4.2.1.6. City:

Pamplona

4.2.1.7. Country:

Spain

4.2.2. Legal representative

4.2.2.1. Name:

COMUNIDAD FORAL DE NAVARRA –GOBIERNO DE NAVARRA

4.2.2.2. Email:

transicionenergetica@navarra.es

4.2.2.3. Phone:

+34848429700

4.2.2.4. Address:

AVENIDA CARLOS III 2

4.2.2.5. Post code:

31002

4.2.2.6. City:

IRUÑA/ PAMPLONA

4.2.2.7. Country:

Spain

4.2.2.8. Legal Representative declaration:

LEAR Declaration- Navarra.fdo.pdf

4.2.2.9. Signature date document:

02-03-2023

4.2.3. Financial Manager

4.2.3.1. Name:

COMUNIDAD FORAL DE NAVARRA –GOBIERNO DE NAVARRA

4.2.3.2. Email:

transicionenergetica@navarra.es

4.2.3.3. Phone:

+34848429700

4.2.3.4. Address:

AVENIDA CARLOS III 2

4.2.3.5. Post code:

31002

4.2.3.6. City:

IRUÑA/ PAMPLONA

4.2.3.7. Country:

Spain

4.3. Bank account

4.3.1. IBAN:

ES07 2100 2173 8802 0026 7858

4.3.2. SWIFT:

CAIXESBBXXX

4.3.3. Bank:

Caixabank

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

Navarra can be considered a region committed and working hard in terms of Clean Energy Transition. In this sense, the region has an Energy Plan 2030, currently being updated, which addresses important challenges to achieve the goal of CO2 neutrality.

The designing of the energy strategy and a sustainable energy model is one the main competences of the Directorate of Industry, Energy and S4 Projects of the Government of Navarra, partner in this proposal.

The Energy and environmental strategy of Navarra with horizon 2030 including a renovation and maintenance program for the hydroelectric small facilities power are entirely related to the pillars of this proposal.

The newly approved regional Law on Energy Transition and Climate Change urges the Government of Navarra to promote the continuity of the activity of those existing hydroelectric plants linked to reservoirs for irrigation, drinking water and water for industrial use at the expiration of its concession. Likewise, it will promote the installation of new power stations in existing and newly built canals and reservoirs intended for the indicated uses.

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

The regional government acknowledges that all relevant public authorities at all levels and the public sector need to play a crucial role in the energy transition, and for this reason it is essential to have all of them involved and coordinated in the planning process.

In addition, the regional authorities also acknowledge the need to involve the citizens, the industry, and other stakeholders in developing programs, such as feasibility studies, renovation, maintenance, energy management systems, and governance for the hydroelectric small facilities power addressed in this project.

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

The Government of Navarra has a wide experience participating in and managing EU co-financed projects. Here is a list of the co-financed projects:

- Sustainavility (as a leader and coordinator): SustaiNAVibility was conceived as a new measure to promote efficient energy management and was part of the European H2020 program. With a duration of 3 years, it mobilized more than 16.3 million euros in investment in energy efficiency. The project, in its implementation, benefited three types of groups: municipalities, citizens and industry.
- Life-NADAPTA (as a collaborator): The objective of the project is to increase resilience to Climate Change in Navarra through intersectorality, long-term sustainability, participation and networking, contributing to the implementation of all the actions included in the Roadmap for the fight against Climate Change. Climate HCCN-KLINa. This project aims to integrate the different sectoral policies, so that the fight against Climate Change is incorporated into its programming and development. It therefore constitutes a regional strategy, which allows progress in the different sectors in a coordinated manner.
- Stardust (as a collaborator): STARDUST is an EU Horizon 2020 Smart Cities project, bringing together advanced European cities, thus forming a constellation of "islands of innovation": exemplary models of highly efficient, intelligent and citizen-oriented smart cities. Green technical solutions and innovative non-technical solutions implemented and validated, which allows them to be financed and replicable for other cities. In fact, STARDUST has lit the way for cities to enjoy a more sustainable livelihood by weaving innovation and imagination at their fingertips.
- mPOWER (as a participant): The project promoted municipal action that generates the energy transition towards low-carbon systems. Municipal action is defined as specific initiatives taken by city and local government actors to empower local actors and create new forms of urban governance in the energy system in pursuit of a low-carbon transition (recognizing that there may be other main reasons, such as addressing the fuel problem). poverty or energy security). Through mPOWER, participating authorities from across Europe learned from replicable best practices; they recognized risks, obstacles and blockages; identified and committed to replication pathways best suited to local needs; and incubated at least 30 new and improved municipal energy policies and projects within the duration of the project. Lessons learned will be disseminated publicly and through target networks in easily accessible formats for replication.
- POTENT (as a collaborator): This project supports communities to develop or improve energy services that are locally owned. The objective is to reduce carbon emissions through more and better energy services provided by local and regional authorities. Pamplona Council is a member of the Consortium and GN has actively participated in some of the actions.
- ZCI -Zero Carbon Infrastructure (beneficiary partner): This recently approved project is part of the Interreg Europe 2021-2027 program. The project aims practical ways to create Zero Carbon Infrastructure in eight different cities and regions. Building on work already done, the partners will find and test practical solutions to these challenges: private (electric) vehicles charging infrastructure – barriers and solutions, sustainable urban logistics, the business model of sustainable urban mobility - incentives that build customer demand for decarbonised transport solutions and transition to zero carbon mobility: public acceptance and communication.

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

N/A

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

N/A

4.4.6. In the case of partners from outside the programme area:
Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?

N/A

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

The aim of this project is to offer public service and replicability.

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

All the external services needed will be via public procurement procedures.

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

Only Sakana Garatzen agency, as the associated partner and promoter of the Navarra pilot and Lizarraga council will benefit from the project but not financially.

The benefits of the project are expected to be for the open public because of its possible replicability.

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

215,877.46 €

4.6.2. Total Costs

215,877.46 €

4.6.3. Funding amount (ERDF)

161,908.10 €

Co-financing rate

75.00 %

4.6.4. Partner contribution

53,969.36 €

4.6.5. Other Fundings

0.00 €

4.6.6. Budget spent outside Programme Area

0.00 €

Percentage between budget spent outside Programme Area and Total Eligible Budget

0.00 %

4.6.7. Origin of co-financing of the partner's contribution

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
Gobierno de Navarra (Departamento de Desarrollo Económico y Empresarial)	Public body	53,969.36 €	25.00 %

4.7. Partner budget by budget line and year

4.7.1. Total Eligible Budget

215,877.46 €

4.7.2. Staff Costs – Calculation Method

Real costs staff and simplified costs office and travel

4.7.3. Preparation costs

2024

Budget: 1,165.33 €

4.7.4. Staff costs

2024

Budget: 53,331.69 €

2025

Budget: 58,848.76 €

2026

Budget:	44,136.57 €
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4.7.5. Office and administrative expenditure

2024

Budget:	7,999.75 €
----------------	------------

2025

Budget:	8,827.31 €
----------------	------------

2026

Budget:	6,620.49 €
----------------	------------

4.7.6. Travel and accommodation costs

2024

Budget:	7,999.75 €
----------------	------------

2025

Budget:	8,827.31 €
----------------	------------

2026

Budget:	6,620.49 €
----------------	------------

4.7.7. External expertise and services costs

2024

Budget:	2,000.00 €
----------------	------------

Description:	Regional and interregional dissemination events: External communication expertise will be needed to organize the events
---------------------	--

Award procedure:	The regional administration will require three different budgets to the local enterprises in order to choose the most convenient one.
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2025

Budget:	1,000.00 €
----------------	------------

Description:	External Expertise to assist in preparing project videos: External communication expertise will be needed
---------------------	--

Award procedure:	The regional administration will require three different budgets to the local enterprises in order to choose the most convenient one.
-------------------------	---

2026

Budget:	3,000.00 €
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Description:	Interregional partner meetings, regional stakeholder group meetings: External expertise will be necessary to organize the events
---------------------	--

Award procedure:	The regional administration will require three different budgets to the local enterprises in order to choose the most convenient one.
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4.7.8. Equipment costs

2024	
Budget:	1,500.01 €
Description:	Office equipment will be necessary for the new staff: The regional administration should provide the fully euiped workplace for the three years of project
Award procedure:	The regional administration will require three different budgets to the local enterprises in order to choose the most convenient one.
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.7.9. Infrastructures and works costs

2024	
Budget:	1,000.00 €
Description:	Design&print own-language brochure, roll-up banner/poster
Award procedure:	The regional administration will require three different budgets to the local enterprises in order to choose the most convenient one.
2025	
Budget:	1,500.00 €
Description:	Design&print own-language brochure, roll-up banner/poster
Award procedure:	The regional administration will require three different budgets to the local enterprises in order to choose the most convenient one.
2026	
Budget:	1,500.00 €
Description:	Design&print own-language brochure, roll-up banner/poster
Award procedure:	The regional administration will require three different budgets to the local enterprises in order to choose the most convenient one.

4.8. Complementary information

4.8.1. Investment Title

4.8.2. Investment Budget

0.00 €

4.8.3. Technical description and justification

4.8.4. Investment requirements

4.8.5. Ownership and durability

4.0 COMUNIDAD DE AGUAS RIEGOS COMARCA SANTA CRUZ DE LA PALMA BREÑAS MAZO(GERENCIA)

4.0.1 Partner Number:

10

4.0.2 Position in the partnership:

Associated partner

4.1.1 Department

4.1.1.1 Abbreviation:

GERENCIA

4.1.1.2 Entity name:

COMUNIDAD DE AGUAS RIEGOS COMARCA SANTA CRUZ DE LA PALMA BREÑAS MAZO

4.1.1.3 Entity name in English:

4.1.1.4 Department name:

GERENCIA

4.1.1.5 Organization type:

Civil society association

4.1.1.6 Entity legal status:

Not-for-profit private organization

4.1.1.7 Tax number:

38040085V

4.1.1.8 Website:

4.1.1.9 Organization Size:

9

4.1.1.10 VAT recovery:

True

4.1.2. Location

4.1.2.1 Country:

Spain

4.1.2.2. NUTS II

Canarias

4.1.2.3. NUTS III

La Palma

4.1.2.4. City

BREÑA BAJA

4.1.2.5. Address

CALLE TONOLERO N°1 SAN ANTONIO

4.1.3 Documentation

4.1.3.1. Vat statement

4.1.3.2. Bank statement

4.1.3.3. Associated Partner declaration

4.1.3.3 Associated Partner declaration_EN.pdf

4.1.3.3. Associated Partner declaration date

01/03/2023

4.1.3.5. State Aid declaration

4.1.3.6 State Aid declaration date

4.2.1 Contact person

4.2.1.1 Name:

ANTONIO MODESTO PEREZ CARBALLO

4.2.1.2. Email:

cdadpabrema@yahoo.es

4.2.1.3. Phone:

+34 639611975

4.2.1.4. Address:

CALLE EL TONOLERO Nº1 CASA DEL AGUA, SAN ANTONIO

4.2.1.5. Post code:

38711

4.2.1.6. City:

BREÑA BAJA

4.2.1.7. Country:

Spain

4.2.2. Legal representative

4.2.2.1. Name:

4.2.2.2. Email:

4.2.2.3. Phone:

4.2.2.4. Address:

4.2.2.5. Post code:

4.2.2.6. City:

4.2.2.7. Country:

4.2.2.8. Legal Representative declaration:

4.2.2.9. Signature date document:

4.2.3. Financial Manager

4.2.3.1. Name:

4.2.3.2. Email:

4.2.3.3. Phone:

4.2.3.4. Address:

4.2.3.5. Post code:

4.2.3.6. City:

4.2.3.7. Country:

4.3. Bank account

4.3.1. IBAN:

4.3.2. SWIFT:

4.3.3. Bank:

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

CRBM is a legal entity, independent of its members, based on the legislation of the water communities of the Canary Islands (Spain). The object and purpose of CRBM is the investigation and extraction of groundwater by wells, galleries or any other suitable method, as well as the construction of infrastructures, exploitation, distribution and sale of water for the benefit of its members. The members of the community must be users of irrigation water for agriculture or water supply. The contribution of the members is proportional to their water needs.

With these competences CRBM is able to design, develop, build, implement and manage water infrastructures so micro-hydro power production would be of great interest to be more efficient and sustainable and increase the benefits for its members.

Currently, CRBM has more than 3,500 members, supplies a flow of 640 m³/h, distributes irrigation water for more than 500 ha of crops and manages more than 100 km of networks and pipelines in four municipalities. CRBM is one of the most important water management communities on the island of La Palma and participates in water policies and in the island's RBMP according to the WFD.

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

CRBM will have a role of collaborator of the project partners and interested observer of the expected results of the Project (associated partner).

CRBM will contribute in several activities by assisting in obtaining data and requirements for regional research and studies (Activities 1.3, 1.4, 3.1), participating as local stakeholders (Activities 2.3, 2.4) and verifying and disseminating the policies and recommendations obtained (Activity 4.3) that facilitate replicability and technology transfer to its territory.

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

CRBM has participated in different public-private partnership projects for the modernisation and improvement of irrigation systems in the southeast of the island of La Palma. These investments have been co-financed with EU EAFRD funds. Currently, it is in the phase of agreements for new irrigation modernisation and consolidation works with financing from NextGenerationEU funds.

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

CRBM will have the role of collaborator of the project partners and interested observer of the expected results of the project.

The project results will allow to develop technological capacities, test the existing potential, understand the requirements and demonstrate the feasibility of these solutions. CRBM has 3-4 proposals for small-scale micro-hydro generation as part of its strategic plan that could be reinforced for development.

**4.4.6. In the case of partners from outside the programme area:
Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?**

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

0.00 €

4.6.2. Total Costs

0.00 €

4.6.3. Funding amount (ERDF)

0.00 €

Co-financing rate

4.6.4. Partner contribution

0.00 €

4.6.5. Other Fundings

0.00 €

4.6.6. Budget spent outside Programme Area

0.00 €

Percentage between budget spent outside Programme Area and Total Eligible Budget

4.6.7. Origin of co-financing of the partner's contribution

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
COMUNIDAD DE AGUAS RIEGOS COMARCA SANTA CRUZ DE LA PALMA BREÑAS MAZO (GERENCIA)	Not-for-profit private organization	0.00 €	

4.7. Partner budget by budget line and year

4.7.1. Total Eligible Budget
0.00 €

4.7.2. Staff Costs – Calculation Method

4.7.3. Preparation costs

2024
Budget: 0.00 €

4.7.4. Staff costs

2024
Budget: 0.00 €
2025
Budget: 0.00 €
2026
Budget: 0.00 €

4.7.5. Office and administrative expenditure

2024
Budget: 0.00 €
2025
Budget: 0.00 €
2026
Budget: 0.00 €

4.7.6. Travel and accommodation costs

2024
Budget: 0.00 €
2025
Budget: 0.00 €
2026
Budget: 0.00 €

4.7.7. External expertise and services costs

2024		
Budget:		0.00 €
Description:		
Award procedure:		
2025		
Budget:		0.00 €
Description:		
Award procedure:		
2026		
Budget:		0.00 €
Description:		
Award procedure:		

4.7.8. Equipment costs

2024		
Budget:		0.00 €
Description:		
Award procedure:		
2025		
Budget:		0.00 €
Description:		
Award procedure:		
2026		
Budget:		0.00 €
Description:		
Award procedure:		

4.7.9. Infrastructures and works costs

2024		
Budget:		0.00 €
Description:		
Award procedure:		
2025		
Budget:		0.00 €
Description:		
Award procedure:		
2026		

Budget:	0.00 €
Description:	
Award procedure:	

4.8. Complementary information

4.8.1. Investment Title

4.8.2. Investment Budget

0.00 €

4.8.3. Technical description and justification

4.8.4. Investment requirements

4.8.5. Ownership and durability

4.0 EEM - Empresa de Electricidade da Madeira S.A.(Direção de Estudos e Planeamento)

4.0.1 Partner Number:

11

4.0.2 Position in the partnership:

Associated partner

4.1.1 Department

4.1.1.1 Abbreviation:

DEP

4.1.1.2 Entity name:

EEM - Empresa de Electricidade da Madeira S.A.

4.1.1.3 Entity name in English:

4.1.1.4 Department name:

Direção de Estudos e Planeamento

4.1.1.5 Organization type:

Regional public organisations

4.1.1.6 Entity legal status:

Profit-making private organization

4.1.1.7 Tax number:**511010435****4.1.1.8 Website:****4.1.1.9 Organization Size:****600****4.1.1.10 VAT recovery:****False****4.1.2. Location****4.1.2.1 Country:****Portugal****4.1.2.2. NUTS II****Região Autónoma da Madeira****4.1.2.3. NUTS III****Região Autónoma da Madeira****4.1.2.4. City****Funchal****4.1.2.5. Address****Avenida do Mar e das Comunidades Madeirenses nº32****4.1.3 Documentation****4.1.3.1. Vat statement****4.1.3.2. Bank statement****4.1.3.3. Associated Partner declaration****4.1.3.3 Associated Partner declaration.docx.pdf****4.1.3.3. Associated Partner declaration date****03/03/2023****4.1.3.5. State Aid declaration****4.1.3.6 State Aid declaration date**

4.2.1 Contact person

4.2.1.1 Name:

Agostinho Figueira

4.2.1.2. Email:

afigueira@eem.pt

4.2.1.3. Phone:

+351291211331

4.2.1.4. Address:

Av. do Mar e das Comunidades Madeirenses nº32

4.2.1.5. Post code:

9060-190

4.2.1.6. City:

Funchal

4.2.1.7. Country:

Portugal

4.2.2. Legal representative

4.2.2.1. Name:

4.2.2.2. Email:

4.2.2.3. Phone:

4.2.2.4. Address:

4.2.2.5. Post code:

4.2.2.6. City:

4.2.2.7. Country:

4.2.2.8. Legal Representative declaration:

4.2.2.9. Signature date document:

4.2.3. Financial Manager

4.2.3.1. Name:

4.2.3.2. Email:

4.2.3.3. Phone:

4.2.3.4. Address:

4.2.3.5. Post code:

4.2.3.6. City:

4.2.3.7. Country:

4.3. Bank account

4.3.1. IBAN:

4.3.2. SWIFT:

4.3.3. Bank:

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

EEM owns and operates 8 hydro power plants (some of them reversible) with power ranging from 500kW to 30MW. EEM is fully owned by the Regional Government of Madeira and our activity it's regulated by the National Regulator

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

EEM produces, transmits, distributes and commercialises electricity.

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

H2020: SMILE Project
H2020: INSULAE Project
Horizon Europe: i-Stentore

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

As Associated Partner, EEM – Empresa de Electricidade da Madeira S.A., through its Studies and Planning Directorate, has the technical competences to evaluate the contributors progress in some of the proposed Work Packages. In addition, EEM can contribute by guiding and suggesting approaches to reach the best outcome to the Project, taking into consideration our large experience in the sector.

4.4.6. In the case of partners from outside the programme area:
Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

0.00 €

4.6.2. Total Costs

0.00 €

4.6.3. Funding amount (ERDF)

0.00 €

Co-financing rate

4.6.4. Partner contribution

0.00 €

4.6.5. Other Fundings

0.00 €

4.6.6. Budget spent outside Programme Area

0.00 €

Percentage between budget spent outside Programme Area and Total Eligible Budget

4.6.7. Origin of co-financing of the partner's contribution

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
EEM - Empresa de Electricidade da Madeira S.A. (Direção de Estudos e Planeamento)	Profit-making private organization	0.00 €	

4.7. Partner budget by budget line and year

4.7.1. Total Eligible Budget
0.00 €

4.7.2. Staff Costs – Calculation Method

4.7.3. Preparation costs

2024	
Budget:	0.00 €

4.7.4. Staff costs

2024		
Budget:		0.00 €
2025		
Budget:		0.00 €
2026		
Budget:		0.00 €

4.7.5. Office and administrative expenditure

2024		
Budget:		0.00 €
2025		
Budget:		0.00 €
2026		
Budget:		0.00 €

4.7.6. Travel and accommodation costs

2024		
Budget:		0.00 €
2025		
Budget:		0.00 €
2026		
Budget:		0.00 €

4.7.7. External expertise and services costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.7.8. Equipment costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.7.9. Infrastructures and works costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €

Description:	
Award procedure:	

4.8. Complementary information

4.8.1. Investment Title

4.8.2. Investment Budget

0.00 €

4.8.3. Technical description and justification

4.8.4. Investment requirements

4.8.5. Ownership and durability

4.0 Sakanako Garapen Agentzia(Koordinazioa)

4.0.1 Partner Number:

12

4.0.2 Position in the partnership:

Associated partner

4.1.1 Department

4.1.1.1 Abbreviation:

Koord

4.1.1.2 Entity name:

Sakanako Garapen Agentzia

4.1.1.3 Entity name in English:

Sakana Development Agency

4.1.1.4 Department name:

Koordinazioa

4.1.1.5 Organization type:

Local public organisations

4.1.1.6 Entity legal status:

Not-for-profit private organization

4.1.1.7 Tax number:

B71099204

4.1.1.8 Website:

www.sakanagaratzen.com

4.1.1.9 Organization Size:

6 employees

4.1.1.10 VAT recovery:

False

4.1.2. Location

4.1.2.1 Country:

Spain

4.1.2.2. NUTS II

Comunidad Foral de Navarra

4.1.2.3. NUTS III

Navarra

4.1.2.4. City

Lakuntza

4.1.2.5. Address

Uriz kalea 32

4.1.3 Documentation

4.1.3.1. Vat statement

4.1.3.2. Bank statement

4.1.3.3. Associated Partner declaration

Associated Partner declaration-Sakana Garapen Agentzia.pdf

4.1.3.3. Associated Partner declaration date

01/03/2023

4.1.3.5. State Aid declaration

4.1.3.6 State Aid declaration date

4.2.1 Contact person

4.2.1.1 Name:

Iker Manterola Matxain

4.2.1.2. Email:

imanterola@sakanagaratzen.com

4.2.1.3. Phone:

+34674146472

4.2.1.4. Address:

Utzugane, Utzubar industriagunea 8 partzela

4.2.1.5. Post code:

31839

4.2.1.6. City:

Arbizu

4.2.1.7. Country:

Spain

4.2.2. Legal representative

4.2.2.1. Name:

4.2.2.2. Email:

4.2.2.3. Phone:

4.2.2.4. Address:

4.2.2.5. Post code:

4.2.2.6. City:

4.2.2.7. Country:

4.2.2.8. Legal Representative declaration:

4.2.2.9. Signature date document:

4.2.3. Financial Manager

4.2.3.1. Name:

4.2.3.2. Email:

4.2.3.3. Phone:

4.2.3.4. Address:

4.2.3.5. Post code:

4.2.3.6. City:

4.2.3.7. Country:

4.3. Bank account

4.3.1. IBAN:

4.3.2. SWIFT:

4.3.3. Bank:

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

The Sakana Development Agency is responsible for directing and dynamizing the Sakana Region's Strategic Socio-economic Development Plan. The Strategic Plan sets out the energy area, the main objective of which is to strengthen the implementation and dissemination of renewable energies.

During the period 2014-2021, Sakana Development Agency has carried out various energy initiatives, including advising on the design and implementation of the Lizarraga microgrid and e-HIERA project, an energy storage innovation project carried out among several companies and research institutions which has been tested over Lizarragas microgrid.

Sakana Development Agency's institutional role is to promote public-private cooperative innovation projects that respond to the challenges of the region's sustainable future. To achieve that, among other activities, we help local authorities in the design and implementation of local public policies

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

Sakana Development Agency will facilitate the detailed study of the current situation in the Lizarraga microgrid, specific needs for improvement and possible technical solutions. It will also support activities involving social actors to reduce energy poverty, engaging with local stakeholders and energy communities and raising public awareness on renewable solutions.

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

Sakana Development Agency has participated in several EU projects, the most relevant participation has been a leadership in Interreg POCTEFA project called BERTAN (<https://www.bertan-poctefa.eu/fr/>) .

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

The involvement of Sakana development agency will ensure to get the most relevant information on the Lizarraga microgrid and the participation of local actors.

4.4.6. In the case of partners from outside the programme area: Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

0.00 €

4.6.2. Total Costs

0.00 €

4.6.3. Funding amount (ERDF)

0.00 €

Co-financing rate

4.6.4. Partner contribution

0.00 €

4.6.5. Other Fundings

0.00 €

4.6.6. Budget spent outside Programme Area



0.00 €

Percentage between budget spent outside Programme Area and Total Eligible Budget

4.6.7. Origin of co-financing of the partner's contribution

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
Sakanako Garapen Agentzia (Koordinazioa)	Not-for-profit private organization	0.00 €	

4.7. Partner budget by budget line and year

4.7.1. Total Eligible Budget

0.00 €

4.7.2. Staff Costs – Calculation Method

4.7.3. Preparation costs

2024

Budget: 0.00 €

4.7.4. Staff costs

2024

Budget: 0.00 €

2025

Budget: 0.00 €

2026

Budget: 0.00 €

4.7.5. Office and administrative expenditure

2024

Budget: 0.00 €

2025

Budget: 0.00 €

2026

Budget: 0.00 €

4.7.6. Travel and accommodation costs

2024		
Budget:		0.00 €
2025		
Budget:		0.00 €
2026		
Budget:		0.00 €

4.7.7. External expertise and services costs

2024		
Budget:		0.00 €
Description:		
Award procedure:		
2025		
Budget:		0.00 €
Description:		
Award procedure:		
2026		
Budget:		0.00 €
Description:		
Award procedure:		

4.7.8. Equipment costs

2024		
Budget:		0.00 €
Description:		
Award procedure:		
2025		
Budget:		0.00 €
Description:		
Award procedure:		
2026		
Budget:		0.00 €
Description:		
Award procedure:		

4.7.9. Infrastructures and works costs

2024		
------	--	--

Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.8. Complementary information

4.8.1. Investment Title

4.8.2. Investment Budget

0.00 €

4.8.3. Technical description and justification

4.8.4. Investment requirements

4.8.5. Ownership and durability

4.0 Cardiff University(School of Engineering)

4.0.1 Partner Number:

13

4.0.2 Position in the partnership:

Associated partner

4.1.1 Department

4.1.1.1 Abbreviation:

ENGIN

4.1.1.2 Entity name:

Cardiff University

4.1.1.3 Entity name in English:

Cardiff University

4.1.1.4 Department name:

School of Engineering

4.1.1.5 Organization type:

Education and training centre

4.1.1.6 Entity legal status:

Not-for-profit private organization

4.1.1.7 Tax number:

615860927

4.1.1.8 Website:

<https://www.cardiff.ac.uk/>

4.1.1.9 Organization Size:

over 5000

4.1.1.10 VAT recovery:

False

4.1.2. Location

4.1.2.1 Country:

United Kingdom

4.1.2.2. NUTS II

East Wales

4.1.2.3. NUTS III

Cardiff and Vale of Glamorgan

4.1.2.4. City

Cardiff

4.1.2.5. Address

Queen's Building, The Parade, Cardiff CF24 3AA UK

4.1.3 Documentation

4.1.3.1. Vat statement

4.1.3.2. Bank statement

4.1.3.3. Associated Partner declaration

4.1.3.3 Associated Partner declaration_CU - RA ENGIN INTERREG.pdf

4.1.3.3. Associated Partner declaration date

01/03/2023

4.1.3.5. State Aid declaration

4.1.3.6 State Aid declaration date

01/03/2023

4.2.1 Contact person

4.2.1.1 Name:

Professor Reza Ahmadian

4.2.1.2. Email:

AhmadianR@cardiff.ac.uk

4.2.1.3. Phone:

+44 2920874003

4.2.1.4. Address:

School of Engineering, Queen's Building, The Parade

4.2.1.5. Post code:

CF24 3AA

4.2.1.6. City:

Cardiff

4.2.1.7. Country:

United Kingdom

4.2.2. Legal representative

4.2.2.1. Name:

4.2.2.2. Email:

4.2.2.3. Phone:

4.2.2.4. Address:

4.2.2.5. Post code:

4.2.2.6. City:

4.2.2.7. Country:

4.2.2.8. Legal Representative declaration:

4.2.2.9. Signature date document:

4.2.3. Financial Manager

4.2.3.1. Name:

4.2.3.2. Email:

4.2.3.3. Phone:

4.2.3.4. Address:

4.2.3.5. Post code:

4.2.3.6. City:

4.2.3.7. Country:

4.3. Bank account

4.3.1. IBAN:

4.3.2. SWIFT:

4.3.3. Bank:

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

Experimental and digital modelling of renewable energy schemes and devices, including very low head hydro turbines. This includes various aspects of such schemes, including optimisation of energy output, broader benefits for migration to net zero, economic assessment and public and policy engagement.

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

The partner will directly be involved in the following activities:

Activity 1.4. Review and assessment of integration with other Renewable Energy Sources, Energy Storage Solutions and the Grid

Activity 2.1 Networking with other projects and initiatives on integration of renewable energy in isolated areas

Activity 3.3. Development of technical solutions for the pilots

Activity 4.3. Define policy recommendations and implementation guidelines

The partner will also take part in the project meetings where feasible.

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

Cardiff University have contributed to many European projects as the project lead or partner. The main contact at Cardiff University, namely Professor Reza Ahmadian, had part of the team leading MAREN2 and also the main UK PI in EERES4WATER. Both of these projects funded by INTERREG Atlantic Area. He is also the PI at Cardiff University for Marine Energy Engineering Centre of Excellence (MEECE) funded by the ERDF.

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

The associate partner has a strong track record in renewable energy, particularly through European and national research and industrial projects. Due to the similarities between the UK and INTERREG Atlantic Area, which is evidenced by previous inclusion of the UK in the area, cultivation of ideas between the project and a key UK research institution active in the field can benefit the project.

4.4.6. In the case of partners from outside the programme area: Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?

Other partners have less experience on the digital modelling of renewable energy schemes and devices, including very low head hydro turbines as well as on the optimisation of energy output, the benefits for migration to net zero, economic assessment and public and policy engagement.

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

0.00 €

4.6.2. Total Costs

0.00 €

4.6.3. Funding amount (ERDF)

0.00 €

Co-financing rate

4.6.4. Partner contribution

0.00 €

4.6.5. Other Fundings

0.00 €

4.6.6. Budget spent outside Programme Area

0.00 €

Percentage between budget spent outside Programme Area and Total Eligible Budget

4.6.7. Origin of co-financing of the partner’s contribution

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
Cardiff University (School of Engineering)	Not-for-profit private organization	0.00 €	

4.7. Partner budget by budget line and year

4.7.1. Total Eligible Budget

0.00 €

4.7.2. Staff Costs – Calculation Method

4.7.3. Preparation costs

2024

Budget: 0.00 €

4.7.4. Staff costs

2024

Budget: 0.00 €

2025

Budget: 0.00 €

2026

Budget: 0.00 €

4.7.5. Office and administrative expenditure

2024

Budget:	0.00 €
2025	
Budget:	0.00 €
2026	
Budget:	0.00 €

4.7.6. Travel and accommodation costs

2024	
Budget:	0.00 €
2025	
Budget:	0.00 €
2026	
Budget:	0.00 €

4.7.7. External expertise and services costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.7.8. Equipment costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	

Budget:	0.00 €
Description:	
Award procedure:	

4.7.9. Infrastructures and works costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.8. Complementary information

4.8.1. Investment Title
4.8.2. Investment Budget
0.00 €
4.8.3. Technical description and justification
4.8.4. Investment requirements
4.8.5. Ownership and durability

4.0 ARM-Águas e Resíduos da Madeira, S.A.(Direção-Geral dos Serviços de Águas)

4.0.1 Partner Number:
14
4.0.2 Position in the partnership:
Partner

4.1.1 Department

4.1.1.1 Abbreviation:

DSA

4.1.1.2 Entity name:

ARM-Águas e Resíduos da Madeira, S.A.

4.1.1.3 Entity name in English:

ARM-Águas e Resíduos da Madeira, S.A.

4.1.1.4 Department name:

Direção-Geral dos Serviços de Águas

4.1.1.5 Organization type:

Public enterprises

4.1.1.6 Entity legal status:

Public body

4.1.1.7 Tax number:

509574513

4.1.1.8 Website:

www.arm.pt

4.1.1.9 Organization Size:

847 employees

4.1.1.10 VAT recovery:

True

4.1.2. Location

4.1.2.1 Country:

Portugal

4.1.2.2. NUTS II

Região Autónoma da Madeira

4.1.2.3. NUTS III

Região Autónoma da Madeira

4.1.2.4. City

Funchal

4.1.2.5. Address

Rua Dos Ferreiros 148

4.1.3 Documentation

4.1.3.1. Vat statement

4.1.3.1. Vat statement_vf_signed.pdf

4.1.3.2. Bank statement

4.1.3.2 ARM.rar

4.1.3.3. Project Partner declaration

4.1.3.3. Project Partner Declaration_vf_signed.pdf

4.1.3.3. Project Partner declaration date

02/03/2023

4.1.3.5. State Aid declaration

4.1.3.5. State Aid declaration_signed.pdf

4.1.3.6 State Aid declaration date

03/03/2023

4.2.1 Contact person

4.2.1.1 Name:

Jorge João Gonçalves Gouveia Sousa Abreu

4.2.1.2. Email:

jorge.abreu@arm.pt

4.2.1.3. Phone:

+ 351 291 20 10 20

4.2.1.4. Address:

Rua dos Ferreiros, 148-150

4.2.1.5. Post code:

9000-082

4.2.1.6. City:

Funchal

4.2.1.7. Country:

Portugal

4.2.2. Legal representative

4.2.2.1. Name:

Nélia Maria Sequeira de Sousa

4.2.2.2. Email:

nelia.sousa@arm.pt

4.2.2.3. Phone:

+ 351 291 20 10 20

4.2.2.4. Address:

Rua dos Ferreiros, 148-150

4.2.2.5. Post code:

9000-082

4.2.2.6. City:

Funchal

4.2.2.7. Country:

Portugal

4.2.2.8. Legal Representative declaration:

4.2.2.8-ARM.rar

4.2.2.9. Signature date document:

02-03-2023

4.2.3. Financial Manager

4.2.3.1. Name:

Nélia Maria Sequeira de Sousa

4.2.3.2. Email:

nelia.sousa@arm.pt

4.2.3.3. Phone:

+ 351 291 20 10 20

4.2.3.4. Address:

Rua dos Ferreiros, 148-150

4.2.3.5. Post code:

9000-082

4.2.3.6. City:

Funchal

4.2.3.7. Country:

Portugal

4.3. Bank account

4.3.1. IBAN:

PT50000700000091117580623

4.3.2. SWIFT:

BESCPTPL

4.3.3. Bank:

NOVO BANCO

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

ARM provides facilities of water supply for the Archipelago of Madeira, both for human consumption and irrigation. ARM is currently working on a local micro-hydro pilot. The staff of ARM is highly experienced in water management and is the key stakeholder on this subject in the region.

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

ARM will participate in the following activities of this project:

Activity 1.2 Assessment of implemented prototypes in the participating regions;

Activity 1.3. Study of the needs and the microhydro potential of the pilot areas;

Activity 1.4. Review and assessment of integration with other Renewable Energy Sources, Energy Storage Solutions and the Grid;

Activity 2.1 Networking with other projects and initiatives on integration of renewable energy in isolated areas;

Activity 2.2. Involving Social actors to reduce energy poverty;

Activity 2.4. Raising public awareness on renewables solutions in atlantic isolated areas;

Activity 3.2. Detailed use-case specification;

Activity 3.3. Development of technical solutions for the pilots;

Activity 3.4. Implementation;

Activity 4.1. Comparative assessment of the pilot regions;

Activity 4.3. Define policy recommendations and implementation guidelines;

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

ARM has marginal experience in participating in EU co-financed projects. However, it has a large experience in collaborating with the regional authorities to improve the water management policies and strategies in the Archipelago of Madeira.

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

N/A

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

N/A

4.4.6. In the case of partners from outside the programme area:

Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?

N/A

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

203,146.00 €

4.6.2. Total Costs

203,146.00 €

4.6.3. Funding amount (ERDF)

152,359.50 €

Co-financing rate

75.00 %

4.6.4. Partner contribution

50,786.50 €

4.6.5. Other Fundings

0.00 €

4.6.6. Budget spent outside Programme Area

0.00 €

Percentage between budget spent outside Programme Area and Total Eligible Budget

0.00 %

4.6.7. Origin of co-financing of the partner's contribution

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
ARM-Águas e Resíduos da Madeira, S.A. (Direção-Geral dos Serviços de Águas)	Public body	50,786.50 €	25.00 %

4.7. Partner budget by budget line and year

4.7.1. Total Eligible Budget

203,146.00 €

4.7.2. Staff Costs – Calculation Method

Real costs staff and simplified costs office and travel

4.7.3. Preparation costs

2024

Budget: 0.00 €

4.7.4. Staff costs

2024

Budget: 49,140.00 €

2025

Budget: 49,140.00 €

2026

Budget:	49,140.00 €
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4.7.5. Office and administrative expenditure

2024

Budget:	7,371.00 €
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2025

Budget:	7,371.00 €
----------------	-------------------

2026

Budget:	7,371.00 €
----------------	-------------------

4.7.6. Travel and accommodation costs

2024

Budget:	7,371.00 €
----------------	-------------------

2025

Budget:	7,371.00 €
----------------	-------------------

2026

Budget:	7,371.00 €
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4.7.7. External expertise and services costs

2024

Budget:	3,000.00 €
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Description:	Advertising Services related to the dissemination of the project.
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Award procedure:	Direct award in accordance with the Public Procurement Code
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2025

Budget:	3,000.00 €
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Description:	Advertising Services related to the dissemination of the project.
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Award procedure:	Direct award in accordance with the Public Procurement Code
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2026

Budget:	3,000.00 €
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Description:	Advertising Services related to the dissemination of the project.
---------------------	--

Award procedure:	Direct award in accordance with the Public Procurement Code
-------------------------	--

4.7.8. Equipment costs

2024

Budget:	2,500.00 €
----------------	-------------------

Description:	Acquisition of hardware for support and monitoring of the project.
---------------------	---

Award procedure:	Direct award in accordance with the Public Procurement Code
-------------------------	--



2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.7.9. Infrastructures and works costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.8. Complementary information

4.8.1. Investment Title
4.8.2. Investment Budget
0.00 €
4.8.3. Technical description and justification
4.8.4. Investment requirements
4.8.5. Ownership and durability

4.0 Associação de Jovens Agricultores da Madeira e Porto Santo(Jovens Agricultores)

4.0.1 Partner Number:

15

4.0.2 Position in the partnership:**Associated partner****4.1.1 Department****4.1.1.1 Abbreviation:****Agricultura****4.1.1.2 Entity name:****Associação de Jovens Agricultores da Madeira e Porto Santo****4.1.1.3 Entity name in English:****AJAMPS****4.1.1.4 Department name:****Jovens Agricultores****4.1.1.5 Organization type:****Business networks and associations****4.1.1.6 Entity legal status:****Profit-making private organization****4.1.1.7 Tax number:****511028628****4.1.1.8 Website:****4.1.1.9 Organization Size:****Pequena Dimensão****4.1.1.10 VAT recovery:****False****4.1.2. Location****4.1.2.1 Country:****Portugal****4.1.2.2. NUTS II****Região Autónoma da Madeira****4.1.2.3. NUTS III****Região Autónoma da Madeira**

4.1.2.4. City

Funchal

4.1.2.5. Address

Caminho das Voltas, 17 - Jardim Botânico - Santa Maria Maior

4.1.3 Documentation

4.1.3.1. Vat statement

4.1.3.2. Bank statement

4.1.3.3. Associated Partner declaration

4.1.3.3 Associated Partner Declaration.pdf

4.1.3.3. Associated Partner declaration date

02/03/2023

4.1.3.5. State Aid declaration

4.1.3.6 State Aid declaration date

4.2.1 Contact person

4.2.1.1 Name:

Celina Azevedo

4.2.1.2. Email:

ajamps@gmail.com

4.2.1.3. Phone:

+351 968 777 375

4.2.1.4. Address:

Caminho das Voltas, 17 – Jardim Botânico

4.2.1.5. Post code:

9060-329

4.2.1.6. City:

FUNCHAL

4.2.1.7. Country:

Portugal

4.2.2. Legal representative

4.2.2.1. Name:

4.2.2.2. Email:

4.2.2.3. Phone:

4.2.2.4. Address:

4.2.2.5. Post code:

4.2.2.6. City:

4.2.2.7. Country:

4.2.2.8. Legal Representative declaration:

4.2.2.9. Signature date document:

4.2.3. Financial Manager

4.2.3.1. Name:

4.2.3.2. Email:

4.2.3.3. Phone:

4.2.3.4. Address:

4.2.3.5. Post code:

4.2.3.6. City:

4.2.3.7. Country:

4.3. Bank account

4.3.1. IBAN:

4.3.2. SWIFT:

4.3.3. Bank:

4.4. Partner motivation and contribution

4.4.1. Which are the partner's thematic competences and experiences relevant to the project? What are the institutional role and policy addressing capacity of the partner?

Knowledge of characteristics of agricultural farms and their water reservoirs and geolocation as well as capacities and altitude; being an intermediary in serving the interests of small scale agricultural farms in isolated areas of Madeira island.

4.4.2. What is the role and involvement (contribution and main activities) of your organization in the project?

We will serve as a communication bridge with local agricultural farms where there can be potential for hydro power generation from water irrigation channels and pilot design, namely we foresee collaborating in the following activities of the project: Activity 1.3. Study of the needs and the microhydro potential of the pilot areas; Activity 2.1 Networking with other projects and initiatives on integration of renewable energy in isolated areas; Activity 2.2. Involving Social actors to reduce energy poverty; Activity 2.3. Engagement with local stakeholder groups and energy communities; Activity 3.2. Detailed use-case specification.

4.4.3. If applicable and relevant, please describe the organization's experience in participating in and/or managing EU co-financed projects.

N/A

4.4.4. For the project Lead partner - please describe the organization's capacity and experience in managing and coordinating EU co-financed projects or other international projects. For the project partner coordinating communication activities (i.e. taking over the role of project communication manager), please describe here what are your organisation's relevant communication competences and experiences.

4.4.5. Please describe the role of the associated partner in the project and why its involvement is important for the achievement of the project specific objectives.

Our involvement is important in order to identify the best possible sites in isolated areas that will be adequate for the specific objective of generating hydro-power integrated with RES in isolated rural areas taking into account the Water-Energy-Food Nexus.

4.4.6. In the case of partners from outside the programme area: Which is the added value of the inclusion of this partner from outside of the programme area in the partnership?

4.4.7. Please confirm that the partner is aware of the FLC requirements in its country and the feasibility of their application for the AA area.

I confirm

4.5. State aid information

4.5.1. Is the partner involved in economic activities within the project?

4.5.1.1. Will the partner implement activities and/or offer goods/services for which a market exists?

No

4.5.1.2. Are there activities/goods/services that could have been undertaken by an operator with the view of making a profit (even if this is not the partner's intention)?

No

4.5.2. Does the partner and/or any third party receive a selective advantage within the project?

4.5.2.1. Does the project applicant plan to carry out the economic activities on its own, for example not selecting an external service provider via public procurement procedures?

No

4.5.2.2. Will the project applicant, any other operator not included in the project as a project partner or the target audience gain any benefits from its project economic activities, not received in the normal course of business (i.e. not received in the absence of funding granted through the project)?

No

4.5.3. Risk of state aid

No risk of state aid

4.5.4. C. State aid relevant activities

4.5.5. D. State aid regime

4.6. Partner Co-Financing

4.6.1. Total Eligible Budget

0.00 €

4.6.2. Total Costs

0.00 €

4.6.3. Funding amount (ERDF)**0.00 €****Co-financing rate****4.6.4. Partner contribution****0.00 €****4.6.5. Other Fundings****0.00 €****4.6.6. Budget spent outside Programme Area****0.00 €****Percentage between budget spent outside Programme Area and Total Eligible Budget****4.6.7. Origin of co-financing of the partner's contribution**

Source	Legal status of the contribution	Amount	Percentage of Total Eligible Budget
Associação de Jovens Agricultores da Madeira e Porto Santo (Jovens Agricultores)	Profit-making private organization	0.00 €	

4.7. Partner budget by budget line and year**4.7.1. Total Eligible Budget****0.00 €****4.7.2. Staff Costs – Calculation Method****4.7.3. Preparation costs****2024****Budget: 0.00 €****4.7.4. Staff costs****2024****Budget: 0.00 €****2025****Budget: 0.00 €**

2026	
Budget:	0.00 €

4.7.5. Office and administrative expenditure

2024	
Budget:	0.00 €
2025	
Budget:	0.00 €
2026	
Budget:	0.00 €

4.7.6. Travel and accommodation costs

2024	
Budget:	0.00 €
2025	
Budget:	0.00 €
2026	
Budget:	0.00 €

4.7.7. External expertise and services costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.7.8. Equipment costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	

2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.7.9. Infrastructures and works costs

2024	
Budget:	0.00 €
Description:	
Award procedure:	
2025	
Budget:	0.00 €
Description:	
Award procedure:	
2026	
Budget:	0.00 €
Description:	
Award procedure:	

4.8. Complementary information

4.8.1. Investment Title
4.8.2. Investment Budget
0.00 €
4.8.3. Technical description and justification
4.8.4. Investment requirements
4.8.5. Ownership and durability

5. Project management and communication

5.1. How will you coordinate and manage your project?

5.1.1. Please describe how the project management on the strategic and operational level will be carried out, including the set-up of management structures, responsibilities and procedures, as well as risk management. Please also explain how the internal communication within the partnership will be organised.

Project Coordination will be implemented by a highly experienced team that will apply knowledge, tools, and techniques to assure the project delivers the defined outcomes on time, within budget, and meeting stakeholder expectations. Inspired by the guidelines from the Project Management Body of Knowledge (PMBOK), we will use knowledge areas adapted to our needs and reality, taking into consideration the dynamic nature of projects, that is, using Agile principles. Using the PMBOK guidelines as the methodological framework will guarantee the management of all tasks and ensure the high quality of the deliverables.

The lead partner will develop a Governance Model that includes the actors to be considered for every activity, how they are expected to participate in every WP, and the planned communication actions. Coordination mechanisms will be set up and approved during the kick-off meeting.

We will create a stakeholder matrix to understand and coherently build relations and communicate with stakeholders, also supporting institutional communication.

The lead partner and WP leaders will schedule regular consortium and technical meetings to ensure that activities are on-track, report activities and budget provisions, enhance communication, and engage partners. At least once a year, there will be an in-person meeting to build a shared approach to the goals and to help tackle specific challenges that may have arisen during implementation.

The consortium will adopt a proactive approach to identify, analyze and address risks. A risk traceability matrix will be developed and maintained throughout the project lifecycle. The consortium will focus on anticipating problems that affect quality rather than reacting to them. It will address root causes and establish mitigation measures and resolution plans.

Risk management is an ongoing process. Therefore, any risks identified, along with their mitigating actions and planning, will be discussed during the consortium meetings.

5.2. Which measures will you take to ensure quality in your project?

5.2.1. Describe the planned approach and processes for quality management, i.e. how the quality of deliverables and outputs will be monitored and ensured, and indicate the responsible partner(s). If you plan to conduct any type of project evaluation, please describe its purpose and scope.

The lead partner will define a quality control mechanism to be used throughout the life cycle of the project that will guarantee the achievement of objectives, the correct execution of activities, the achievement of milestones and predetermined outputs/results, the fulfillment of deadlines and the correct budget execution.

An internal protocol of action for the consortium will be established, clearly defining responsibilities. This protocol will guarantee the monitoring, control and compliance of the scorecard, and will establish the procedure for documenting the process, communication and coordination between the partners and internal organization. The team will use a defined, structured, repeatable process for problem resolution, and preventive measures will be effectuated whenever possible.

The data provided by the monitoring system will be a valuable source of information to establish corrective actions in the event of deviations from objectives, expected results and established fundamental criteria.

The project consortium did an initial risk analysis and defined the following risks and risk-mitigation measures:

Scope creep: Lead partner will ensure activities follow the agreed project plan and, if needed, discussed in a consortium meeting.

Budget creep: Lead partner will ensure budget execution follows the agreed plan and, if needed, discuss additional mitigation measures in a consortium meeting.

Poor Consortium communication: A Communication Plan will be set in place to ensure consistent and timely Consortium communication.

Key people leave; loss of competencies: Lead partner and the affected partner(s) will analyze the impact on the project and decide if new expertise needs to be hired to make.

Poor participation of stakeholders/Target stakeholders not willing to participate: Lead partner and the affected partner(s) will decide on alternative ways to showcase the importance and added value of participating in the project, encouraging them to do so.

5.3. What will be the general approach you will follow to communicate about your project?

5.3.1. Please describe how your project's communication objectives, as outlined in the work plan, will help with achieving your project's main result(s). Why is communication important? Which common tactics, channels and tools will help the partnership to reach out to and involve its target audiences? How will the project communication coordinator ensure that all project partners are involved and contribute to communication?

Communication actions will be developed by a small core group and will follow a similar pattern in approaching stakeholders in involved regions. A plan for communication, dissemination and exploitation will guide the outreach strategy and ensure that the core project messages reach the target audiences through the established channels, such as the project website, social media platforms and promotional material, among others. The communication strategy will ensure high visibility, accessibility and impact of the project activities. The specific objectives are to inform stakeholders about the project outputs and results and to seek synergies with related projects, to ensure effective dissemination and achievements, as well as, to support knowledge exchange and capacity building related to microhydro power supply and the infrastructures that will remain active after the project funding period.

This plan will be developed iteratively by the consortium, and will give origin to:

Communication tools: The project will include a corporate identity that will be designed for the project, comprising a logo and corporate identity manual. A website will be created as a common place for all outreach activities. Social media accounts will be set up with the objective to reach professionals, media and the general public.

Communication actions: An introductory workshop will be organized in the regions where pilots will be designed/implemented, explaining the objectives of the project to regional representatives and the public. Events and awareness sessions will be organized in all regions to present activities, results and project outputs.

Target audience: the Consortium aims to target 3 distinct groups: potential end-users (local communities, professionals, SMEs, start-ups, etc.), influential stakeholders (NGOs, policymakers, etc.) and key interlocutors (media partners, bloggers, NGOs and foundations, etc.).

5.4. How do you foresee the reporting procedures for activities and budget (within the partnership)?

5.4.1. Please describe the reporting processes at the level of partners towards the lead partner.

The project coordinator promotes and oversees communication between all project partners using emails, online collaborative tools and virtual meetings (Teams, Zoom). The entire consortium gets together every month (every week for proposal development and when needed for urgent matters). WP leaders will meet once per month. These meetings are online by default and will happen on a predefined schedule, and will assess the implementation of project activities, data management, and overall communication and outreach.

The lead partner guarantees efficient communication by implementing e-mail notifications that include the follow-up meetings and considers thematic content, the budget, WP input/output, activities as well as overall results. The partners are in contact with the lead partner by email, during the meetings - either individual or in group with the rest of the Consortium- and by telephone or with the Project's chat group. The lead partner is notified when the INTERREG Atlantic Secretariat is reported for the administrative and financial management of the project.

The financial project management officer will maintain accounts and report to the managing authority. It will efficiently control the project budget and report expenditures. This function is part of the Lead Partner's Financial Department, which has extensive experience managing European project accounts.

5.5. Cooperation criteria

5.5.1. Joint development:

The proposal is developed in full cooperation by all participants. This includes meetings with all partners (both individually and in group) for general and specific matters. Also, the proposal is circulated among members of the consortium, as well as important documents and templates. There is complete transparency in budget planning too. This whole process allows the identification of synergies, generates new ideas, helps the identification of interdependencies among the WPs and the consequent optimization of the budget.

5.5.2. Joint implementation:

The partners of IsoMicroHydro have a clear role in their corresponding tasks during the implementation of the project. The adequate partnership of the Consortium benefits the project by offering knowledge, resources, greater capacity and support, know-hows and access to a wider distribution channel. The involvement of partners (and associated partners) from different countries in the implementation of each work package ensures greater exchange of knowledge, skills, and know-how, facilitating the interchange of ideas, experiences, and methods to allow a better exploitation of IsoMicroHydro results.

5.5.3. Joint staffing:

The whole Consortium agrees on having equal responsibility for joint staffing roles and their application within the project. All partners will allocate the necessary staff in line with Interreg implementation rules, making sure their roles are defined in the project. Partners and their staff will exchange information on a regular basis to secure a coordinated action without duplication.

5.5.4. Joint financing:

The project is going to be financed as a joint effort. All partners have agreed to co-finance the implementation cost (budget) at a rate of 25%. Associated partners are aware of their involvement and participation in the project as observers/contributors, without a budget.

5.6. Horizontal principles

Sustainable development

5.6.1. Sustainable development effects:

Positive effects

Description of expected effects:

Among all the renewable energy resources, hydropower is a promising alternative for power generation and it is becoming known throughout the world due to several benefits associated with it. When compared with other renewable energy sources like wind and solar, the main advantage associated with hydropower is its continuous supply. The intermittent nature of wind and solar radiation creates the requirement of an electricity storage system, increasing the economic cost, whereas hydropower plants have the advantage of flexibility of its operation in power grids. Electricity generation using naturally flowing water instead of fossil fuels and other conventional energy sources supports its cleanliness and less emissions and other pollutants into the atmosphere. It was found in many studies that the emissions associated with hydropower projects are relatively less as compared to other conventional type power generation systems.

Hydropower is also a very versatile technology, being capable of providing economic and social benefits too. A hydropower project can be established to achieve multiple objectives like electricity generation, irrigation, flood control, tourism etc. Consequently, a region or nation's development with social, economic and environmental matrices is a key factor in the establishment of hydropower projects. In most of the cases, electricity generation is the primary objective of a hydropower plant which brings an overall development of the region by generating power using natural flowing water instead of using fossil fuels, as well as many other outcomes. This is also beneficial for a nation to compete in the carbon trading market and achieve carbon credits and achieve their emissions reduction targets.

Apart from these factors, irrigation, flood control, fisheries, tourism and other employment sources are also associated with hydropower development which brings positive outcomes for society and economy of the region. Consequently, all these factors greatly support the need to increase the hydropower generation capacity throughout the world for achieving the goals of sustainable development.

Equal opportunities

5.6.2. Equal opportunities effects:

Positive effects

Description of expected effects:

IsoMicroHydro will help to empower citizens and communities to take better control of their lives and initiate change by actively using and installing self-consumption renewable energies. This will result in more informed decision making and new forms of social mobilization, facilitated by new ways of communicating and assessing information on hydrology knowledge. The programmed pilots will be playing an increasingly important role in addressing social-technological challenges, primarily by allowing citizens and policymakers access to new forms of data-driven assessment of the problems at hand. The resulting effects on equal opportunities will be numerous, covering security, demographics, socio-economics and sustainable development in general:

- Enabling all actors of society to participate in making their community more resilient and self-sufficient, including disadvantaged groups or communities, senior citizens or people with disabilities.
- Providing equal access to complementary training and experience related to renewable forms of energy.
- Creating more local support for bottom-up initiatives and entrepreneurship that could create new employment directly or indirectly related to IsoMicroHydro objectives (for example environmental monitoring startups, drone-tech and engineer companies, other citizens' science initiatives).
- Create temporary occupational tasks for people on unemployment benefit, keeping them active and valuable contributors of their local community;
- Orient young people towards taking up scientific and engineering careers related to hydrology, information technologies, telecommunications.

The pilots from this project will enable data-driven engagement on renewables energies, creating the basis for more targeted future interventions and enhanced collaboration between the public and the authorities. This will not only contribute to the creation of more equal and inclusive local communities, but will also help in the creation of new jobs and economic development opportunities for groups facing employment, integration problems and/or energy poverty.

Gender equality

5.6.3. Gender equality effects:

Positive effects

Description of expected effects:

This project will implement a committed gender strategy. The aim is to ensure gender balance among the participants including new and temporary staff. Gender equality was considered during the proposal development stage, although there were other characteristics in terms of professionalism and experience on the field of the project, which, in this case, was found to be predominated by male gender, but always giving equal opportunities to both genders and all having the same vote value in the decision-making processes. An important aim is to ensure gender balance among Consortium representatives, who will be interacting with the public and the media, and in particular among those, who will do this in a highly visible role, such as lead expert or the Chair Person / Moderator of a workshop or conference. The Project Coordinator will actively promote and ensure gender equality practices within the Consortium in line with relevant EU and national principles.

5.7. Enviroment Indicators

Programme monitoring environment indicator	Number	Start Date	End Date
Pilot actions to test production of decentralised renewable energy developed	1.00	10-2024	06-2026

6. Budget

6.1. Budget by partner

Partner position	Partner	Country	Programme funding		National contribution	Indicative breakdown of the national contribution		Total eligible budget	Other budget	Total budget
			Funding amount	%		National public	National private			
4	Trinity College Dublin(School of Engineering)	Ireland	232,524.39 €	75.00%	77,508.13 €	77,508.13 €	0.00 €	310,032.52 €	0.00 €	310,032.52 €
2	La Palma Research Centre(La Palma Office)	Spain	62,764.50 €	75.00%	20,921.50 €	0.00 €	20,921.50 €	83,686.00 €	0.00 €	83,686.00 €
8	Trisolaris Advanced Technologies(TRISOLARIS ADVANCED TECHNOLOGIES, LDA)	Portugal	153,956.68 €	75.00%	51,318.90 €	0.00 €	51,318.90 €	205,275.58 €	0.00 €	205,275.58 €
3	Energía Bonita S. Coop.(-)	Spain	89,524.00 €	75.00%	29,841.33 €	0.00 €	29,841.33 €	119,365.33 €	0.00 €	119,365.33 €
13	Cardiff University(School of Engineering)	United Kingdom	0.00 €		0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
10	COMUNIDAD DE AGUAS RIEGOS COMARCA SANTA CRUZ DE LA PALMA BREÑAS MAZO(GERENCIA)	Spain	0.00 €		0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
5	Laboratório Nacional de Energia e Geologia, I.P.(Laboratório Nacional de Energia e Geologia, I.P.)	Portugal	77,618.06 €	75.00%	25,872.69 €	25,872.69 €	0.00 €	103,490.75 €	0.00 €	103,490.75 €
1	Universidade da Madeira(Faculdade de Ciências Exatas e Engenharias)	Portugal	388,865.12 €	75.00%	129,621.70 €	129,621.70 €	0.00 €	518,486.82 €	0.00 €	518,486.82 €
9	Gobierno de Navarra(Departamento de Desarrollo Económico y Empresarial)	Spain	161,908.10 €	75.00%	53,969.36 €	53,969.36 €	0.00 €	215,877.46 €	0.00 €	215,877.46 €

6	ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação(EELab - Enterprise Engineering Lab)	Portugal	178,146.37 €	75.00%	59,382.13 €	0.00 €	0.00 €	237,528.50 €	0.00 €	237,528.50 €
11	EEM - Empresa de Electricidade da Madeira S.A.(Direção de Estudos e Planeamento)	Portugal	0.00 €		0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
12	Sakanako Garapen Agentzia(Koordinazioa)	Spain	0.00 €		0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
14	ARM-Águas e Resíduos da Madeira, S.A.(Direção-Geral dos Serviços de Águas)	Portugal	152,359.50 €	75.00%	50,786.50 €	50,786.50 €	0.00 €	203,146.00 €	0.00 €	203,146.00 €
15	Associação de Jovens Agricultores da Madeira e Porto Santo(Jovens Agricultores)	Portugal	0.00 €		0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
7	Pump-Ille-Up(ille-et-vilaine)	France	157,848.77 €	75.00%	52,616.26 €	52,616.26 €	0.00 €	210,465.03 €	0.00 €	210,465.03 €
Total			1,655,515.49 €		551,838.50 €	390,374.64 €	102,081.73 €	2,207,353.99 €	0.00 €	2,207,353.99 €

6.2. Total budget by budget line and year

	Preparation costs	Staff costs	Office and administrative expenditure	Travel and accommodation costs	External expertise and services costs	Equipment costs	Infrastructures and works costs	Total
2024	17,480.00 €	516,644.56 €	77,496.69 €	77,496.69 €	54,999.67 €	26,880.67 €	1,000.00 €	771,998.28 €
2025		516,161.63 €	77,424.25 €	77,424.25 €	56,500.00 €	7,380.66 €	1,500.00 €	736,390.79 €
2026		495,449.44 €	74,317.43 €	74,317.43 €	45,999.96 €	7,380.66 €	1,500.00 €	698,964.92 €
Total	17,480.00 €	1,528,255.63 €	229,238.37 €	229,238.37 €	157,499.63 €	41,641.99 €	4,000.00 €	2,207,353.99 €

6.3. Total partner's budget by budget line and year

Preparation costs	Staff costs			Office and administrative expenditure			Travel and accommodation costs		
2024	2024	2025	2026	2024	2025	2026	2024	2025	2026

ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação(EELab - Enterprise Engineering Lab)	3,496.00 €	56,675.00 €	56,675.00 €	56,675.00 €	8,501.25 €	8,501.25 €	8,501.25 €	8,501.25 €	8,501.25 €	8,501.25 €
ARM- Águas e Resíduos da Madeira, S.A.(Direção-Geral dos Serviços de Águas)	0.00 €	49,140.00 €	49,140.00 €	49,140.00 €	7,371.00 €	7,371.00 €	7,371.00 €	7,371.00 €	7,371.00 €	7,371.00 €
Associação de Jovens Agricultores da Madeira e Porto Santo(Jovens Agricultores)	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
Cardiff University(School of Engineering)	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
COMUNIDAD DE AGUAS RIEGOS COMARCA SANTA CRUZ DE LA PALMA BREÑAS MAZO(GERENCIA)	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
EEM - Empresa de Electricidade da Madeira S.A.(Direção de Estudos e Planeamento)	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
Energía Bonita S. Coop.(-)	1,165.33 €	28,000.00 €	28,000.00 €	28,000.00 €	4,200.00 €	4,200.00 €	4,200.00 €	4,200.00 €	4,200.00 €	4,200.00 €
Gobierno de Navarra(Departamento de Desarrollo Económico y Empresarial)	1,165.33 €	53,331.69 €	58,848.76 €	44,136.57 €	7,999.75 €	8,827.31 €	6,620.49 €	7,999.75 €	8,827.31 €	6,620.49 €
La Palma Research Centre(La Palma Office)	3,496.00 €	17,100.00 €	17,100.00 €	17,100.00 €	2,565.00 €	2,565.00 €	2,565.00 €	2,565.00 €	2,565.00 €	2,565.00 €
Laboratório Nacional de Energia e Geologia, I.P.(Laboratório Nacional de Energia e Geologia, I.P.)	1,165.33 €	23,416.78 €	23,416.78 €	23,416.78 €	3,512.52 €	3,512.52 €	3,512.52 €	3,512.52 €	3,512.52 €	3,512.52 €
Pump-Ille-Up(ille-et-vilaine)	1,165.33 €	48,000.00 €	42,000.00 €	36,000.00 €	7,200.00 €	6,300.00 €	5,400.00 €	7,200.00 €	6,300.00 €	5,400.00 €
Sakanako Garapen Agentzia(Koordinazioa)	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
Trinity College Dublin(School of Engineering)	1,165.33 €	74,812.10 €	74,812.10 €	74,812.10 €	11,221.82 €	11,221.82 €	11,221.82 €	11,221.82 €	11,221.82 €	11,221.82 €
Trisolaris Advanced Technologies(TRISOLARIS ADVANCED TECHNOLOGIE S, LDA)	1,165.33 €	45,797.50 €	45,797.50 €	45,797.50 €	6,869.63 €	6,869.63 €	6,869.63 €	6,869.63 €	6,869.63 €	6,869.63 €
Universidade da Madeira(Faculdade de Ciências Exatas e Engenharias)	3,496.02 €	120,371.49 €	120,371.49 €	120,371.49 €	18,055.72 €	18,055.72 €	18,055.72 €	18,055.72 €	18,055.72 €	18,055.72 €
Total	17,480.00 €	516,644.56 €	516,161.63 €	495,449.44 €	77,496.69 €	77,424.25 €	74,317.43 €	77,496.69 €	77,424.25 €	74,317.43 €

External expertise and services costs			Equipment costs			Infrastructures and works costs		
2024	2025	2026	2024	2025	2026	2024	2025	2026

ARDITI - Agência Regional para o Desenvolvimento da Investigação, Tecnologia e Inovação(EELab - Enterprise Engineering Lab)	3,000.00 €	3,000.00 €	3,000.00 €	4,000.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
ARM- Águas e Resíduos da Madeira, S.A.(Direção-Geral dos Serviços de Águas)	3,000.00 €	3,000.00 €	3,000.00 €	2,500.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
Associação de Jovens Agricultores da Madeira e Porto Santo(Jovens Agricultores)	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
Cardiff University(School of Engineering)	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
COMUNIDAD DE AGUAS RIEGOS COMARCA SANTA CRUZ DE LA PALMA BREÑAS MAZO(GERENCIA)	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
EEM - Empresa de Electricidade da Madeira S.A.(Direção de Estudos e Planeamento)	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
Energia Bonita S. Coop.(-)	3,000.00 €	3,000.00 €	3,000.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
Gobierno de Navarra(Departamento de Desarrollo Económico y Empresarial)	2,000.00 €	1,000.00 €	3,000.00 €	1,500.01 €	0.00 €	0.00 €	1,000.00 €	1,500.00 €	1,500.00 €
La Palma Research Centre(La Palma Office)	4,500.00 €	4,500.00 €	4,500.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
Laboratório Nacional de Energia e Geologia, I.P.(Laboratório Nacional de Energia e Geologia, I.P.)	2,500.00 €	3,000.00 €	2,999.96 €	2,500.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
Pump-Ille-Up(ille-et-vilaine)	15,499.70 €	17,500.00 €	5,000.00 €	7,500.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
Sakanako Garapen Agentzia(Koordinazioa)	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
Trinity College Dublin(School of Engineering)	4,499.97 €	4,500.00 €	4,500.00 €	1,200.00 €	1,200.00 €	1,200.00 €	0.00 €	0.00 €	0.00 €
Trisolaris Advanced Technologies(TRISOLARIS ADVANCED TECHNOLOGIES S, LDA)	8,000.00 €	8,000.00 €	8,000.00 €	1,499.97 €	0.00 €	0.00 €	0.00 €	0.00 €	0.00 €
Universidade da Madeira(Faculdade de Ciências Exatas e Engenharias)	9,000.00 €	9,000.00 €	9,000.00 €	6,180.69 €	6,180.66 €	6,180.66 €	0.00 €	0.00 €	0.00 €
Total	54,999.67 €	56,500.00 €	45,999.96 €	26,880.67 €	7,380.66 €	7,380.66 €	1,000.00 €	1,500.00 €	1,500.00 €

6.4. Total budget by year

Year	Budget
2024	771,998.28 €
2025	736,390.79 €
2026	698,964.92 €
Total	2,207,353.99 €

6.5. Total budget by budget line

Budget Line	Budget
Preparation costs	17,480.00 €
Staff costs	1,528,255.63 €
Office and administrative expenditure	229,238.37 €
Travel and accommodation costs	229,238.37 €
External expertise and services costs	157,499.63 €
Equipment costs	41,641.99 €
Infrastructures and works costs	4,000.00 €
Total	2,207,353.99 €