Prot. n. 0081200 del 23/06/2022 - [UOR: SI001070 - Classif. II/8]

Associated with document Ref. Ares(2022)3452734 - 05/05/2022

Proposal Evaluation Form

EUROPEAN COMMISSION

Programme for Environment and Climate Action (LIFE)

Evaluation Summary Report - LIFE

Call: LIFE-2021-SAP-ENV
Type of action: LIFE-PJG
Proposal number: 101074314
Proposal acronym: LIFE21-ENV-IT-LIFE RESTART
Duration (months): 36
Proposal title: Reuse of bEer SpenT grAin foR bioplasTics
Activity: LIFE-2021-SAP-ENV-ENVIRONMENT: Circular Economy and Waste + Air + Water + Soil + Noise + Chemicals

N.	Proposer name	Country	Total Cost	%	Grant Requested	%
1	Fondazione di Comunità di Messina o.n.l.u.s.	IT	917,421.21	30.64%	550,452.72	30.64%
2	Ecos-Med Società Cooperativa Sociale	IT	799,666.64	26.71%	479,799.98	26.71%
3	UNIVERSITA DEGLI STUDI DI MESSINA	IT	392,416.08	13.11%	235,449.64	13.11%
4	CROSSING s.r.l.	IT	247,457.83	8.27%	148,474.69	8.27%
5	Birrificio Messina società cooperativa	IT	230,824.68	7.71%	138,494.4	7.71%
6	BIBETECH SPA	IT	405,949.44	13.56%	243,569.66	13.56%
	Total:		2,993,735.88		1,796,241.09	

Abstract:
The EU Brewing Industry produces over 39.5 MioL of beer yearly, generating over 6.4 Miot/year of Beer spent grain (BSG), main side-stream of the brewing process. In EU, 20% of BSG is landfilled (1.28 Miot/year).
LIFE RESTART (Reuse of bEer SpenT grAin foR bioplasTics), is a close to market project which will reuse BSG to substitute Fossil based Plastics (FbP) for food and non-food packaging, giving adequate answer to some of the most pressing environmental issues related to BSG disposal and non-biodegradable, persistent FbP packaging, tackling relevant social issues. Further LIFE RESTART will recover water contained in BSG improving Brewery's wastewater quality, reducing water consumption.
Main Environmental problems targeted are related to:
i) Circular Economy & Waste reduction
ii) Water
iii) Chemicals
LIFE RESTART main objectives, in agreement with LIFE sub-program on Circular economy and Quality of LIFE are:
1) 75-80% Recovery/Reuse of BSG waste for biopolymer production
2) 75% Recovery/reuse of Wastewater (WW) from BSG pre-drying
3) 5% COD/BOD reduction in breweries WW
4) 15% Reduced consumption of non-biodegradable FbP for packaging
5) 35% Reduction of virgin bio-polymers consumption, generating new bio-based feedstocks, without land depletion
6) Generate 7 new green qualified jobs, 2 of which for socio-economic disadvantaged people.
Ambition of LIFE RESTART by replication, transferability activities and business modelling are to recover/reuse 12.000t of BSG, equivalent to 20% of BSG presently landfilled in Italy, three years after the project with 21.5 Mio€/yearly turnover from BSGF-BP production, and up to 35 new jobs in EU. by promoting replicability of LIFE RESTART process in other territories/breweries
The project will mainly be carried out in Sicily where most of the partners are located, one of the "Less developed regions" in EU.

Evaluation Summary Report

Evaluation Result

Total score: 77.75 (Threshold: 55)

Criterion 1 - Relevance

Score: **16.00** (Threshold: 10/20.00 , Weight: -)

The following aspects have been taken into account:
- Relevance of the contribution to one or several of the specific objectives of the LIFE Programme and the targeted sub-programme.
- Extent to which the proposal is in line with the description included in the call for proposals, including, where relevant, its specific priorities.
- Concept and methodology: soundness of the overall intervention logic.
- Extent to which the proposal offers co-benefits and promotes synergies with other policy areas relevant for achieving environment and climate policy objectives.

• The project demonstrates direct relevance to the specific objectives of the LIFE Programme and the sub-programme for the Circular Economy and Quality of Life. It aims to facilitate the transition toward a sustainable, circular, toxic-free, energy-efficient and climate-resilient economy. This is achieved by demonstrating a process technology, and a social business model, for the recovery/recycling of Brewery Spent grain (BSG) waste to produce BSG fillers (BSGF) for high value BSGF biopolymers (BSGF-BP) and fine chemicals for food, feed, cosmetics, and nutraceutics, thereby reducing resource consumption and facilitating the transition towards a circular economy.
• The project provides a good contribution to the specific priorities for LIFE CEQL SAP projects, through the demonstration of an innovative solution for the recovery / reuse of BSG waste for biopolymer production, as well as the recovery of wastewater from BSG pre-drying. The solution is considered innovative, because the proposed mechanical recycling of BSG as a filler for bioplastic production is new to Europe. Furthermore, the project fully complies with one or more of the chosen priority topics, namely "Implementation of innovative solutions (…) for

the separate collection and recycling of bio-waste". The innovative solution is developed by the consortium and verified at bench-scale, and Brewery Spent Grain as agro-industrial by-product can be considered to be a bio-waste.
• The description of the project background, concept, and methodology provides sufficient information to assess the environmental problems and threats targeted, as well as the status of technical preparatory work. In particular, the location and baseline situation at the project site have been precisely presented, and the general status of technical preparatory work, including R&D and lab scale prototype testing, is also well described. The necessary preparatory activities, including technical feasibility at bench scale, of the use of spent beer grains as a filler for bio-polymer production at TRL7, are adequately described and quantified. Sufficient information has been provided to allow a comparison with the state-of-the-art. The baseline consists of the disposal of waste stream, which is either used as animal feed, feedstock for biogas production or is landfilled, with no valuable valorisation technology fully upscaled to industrial level yet, due to the cost and complexity of competing processes. The technical scale of the proposed solution, which is demonstrated by including its mass/energy balance and a flowchart, is appropriate to achieve the expected results and project objectives. Sufficient information has been provided concerning the process, which consists of mechanical recycling steps (pre-drying, grinding, meshing, extruding). However, the stated TRL7 cannot be fully understood, as the previously verified testing at bench-scale suggests a lower TRL. Although the economic feasibility of the proposed solution is supported by a preliminary analysis of its costs, prices, margins, turnover, payback period, etc., insufficient information is included on competitors in the biopolymer sector and the pricing of their products.
• Other EU policies/funding mechanisms (other than those covered by LIFE) are explicitly recognised and discussed, and offer co-benefits and synergies with other policy areas relevant to achieving environment and climate policy objectives. This will be achieved through the development and pursuit of an economic business model, with additional social benefits, for the intended close to market business concept, that offers co-benefits to the surrounding communities, in terms of the employment of marginalised persons in new jobs and the sharing of profits for the benefit of community projects. These novel social enterprise approaches are fully in line with the Green Deal objectives of inclusiveness and a green transition leaving no one behind.

Criterion 2 - Impact

Score: **17.50** (Threshold: 10/20.00 , Weight: 150.00%)

The following aspects have been taken into account:
- Ambition and credibility of impacts expected during and/or after the project due to the activities, including ensuring that no substantial harm is done to the other specific objectives of the LIFE Programme.
- Sustainability of the project results after the end of the project.
- Quality of the measures for the exploitation of project results.
- Potential for the project results to be replicated in the same or other sectors or places, or to be up-scaled by public or private actors or through mobilising larger investments or financial resources (catalytic potential).

• The proposal clearly describes the environmental impacts of the project, mainly linked to BSG waste management and water efficiency. Impacts appear to be sufficiently ambitious, concrete and credible, because around 600t of BSG waste will be recovered/reused for the production of BSGF-BP in the third year of the project, and such a result is coherent with the technical scale and activities, as described in the proposal. Furthermore, there is consistency between the environmental benefits described in the text and the values presented in the Performance Indicators Table, and the KPIs are clear and seem credible.
• Relevant steps in the life-cycle of the proposed solution have been clearly covered, because the proposal demonstrates proper life-cycle thinking. Furthermore, the identified baseline is adequately defined and understandable, and consists of the typical disposal of beer spent grain, a waste stream that is expected to grow over time, putting environmental and economic pressure on breweries; and growing demand for food packaging mostly based on fossil-fuel-based plastics, in the absence of sufficient quantities of bio-based polymers. The assumptions for the expected environmental impact are overall consistent and are ambitious in comparison to the identified baseline. A Life Cycle Analysis (LCA) is included as a project deliverable and is deemed credible.
• The proposal includes a very good strategy and concrete activities linked to the sustainability and exploitation of project results, which will be achieved by implementing a clear strategy on increasing the piloted production capacity to full industrial scale, that takes into account a national market demand study to be conducted as part of the project. The market for the new B2B product could be substantial, provided it meets the demand of end-users in plastic packaging manufacturing. Financing sources have been adequately addressed and revenues are expected in the last three months of the project. Furthermore, the proposal has very good potential and a convincing approach to ensure that the project results will be replicated in the same or other sectors and other places. This will be realised by fully documenting and disclosing the social enterprise business model that is to be developed, together with producing a step-by-step guide and providing access to the production techniques to interested potential social entrepreneurs in other parts of Italy. Four Heineken production plants in Italy have already been identified for replication. However, confirmed agreements for effective uptake of the solution have not been provided. At the same time, proceeds from the sale of the to-be-developed bio-based polymer from spent beer grain will be used to investigate similar production techniques for waste streams from other agri-food activities, such as olive oil and wine production.
• The approach is deemed adequately ambitious and credible, because the strategy is well supported by proper analysis/market knowledge, it clearly targets a significant market and the necessary resources for continuation / uptake and commitments to participate in project activities are provided (several letters of interest from BSG suppliers, end-users, policymakers, associations, financial institution, municipalities, etc., are included). A Work Package for sustainability, replication, and exploitation of project results is included and contains all mandatory deliverables.

Criterion 3 - Quality

Score: **17.00** (Threshold: 10/20.00 , Weight: -)

The following aspects have been taken into account:
- Clarity, relevance and feasibility of the work plan.
- Identification and mobilisation of the relevant stakeholders.
- Appropriate geographic focus of the activities.
- Quality of the plan to monitor and report impacts.
- Appropriateness and quality of the measures to communicate and disseminate the project and its results to different target groups.

• The proposal clearly presents the overall work plan, work packages, and their expected outputs. The implementation and monitoring phases of the project are well described, the scale of technical work packages is clearly explained, and the starting point of the project is sufficiently understood. The technical parameters are adequately explained, and what, how and where activities will be implemented is sufficiently

detailed, including clearly identified deliverables and milestones. Inputs are clearly identified as are outputs (e.g., up to 300 kg/h BSGF-BP production at semi-industrial scale). However, some deliverables and milestones are missing, e.g., IP management agreement, technical articles, final conference etc. Moreover, the description of the risk management plan insufficiently describes technical difficulties related to the intended scale-up, and fails to discuss difficulties related to market uptake of the solution and to obtaining the authorisations required for implementation. In addition, buffer time has not been clearly considered.
• Key stakeholders outside the project consortium have been adequately identified and consulted prior to the submission of the proposal, including the municipality of Roccavaldina, several producers of plastic-based packaging and other products like toys interested in testing the new bio-polymer filler in their production process. A long list of other stakeholders has been provided that would be helpful for promotion, replication, obtaining finance and input materials from breweries. Their commitment to the project seems to be confirmed through letters of support, stating their different levels of cooperation intentions.
• The proposal includes a well-considered communication strategy, including appropriate measures to communicate and disseminate the project results to clearly identified target groups. All obligatory communication requirements are appropriately covered in the work plan.

Criterion 4 - Resources

Score: **16.50** (Threshold: 10/20.00 , Weight: -)

The following aspects have been taken into account:
- Composition of the consortium in terms of expertise, skills and responsibilities and appropriateness of the management structure.
- Appropriateness of the budget and resources and their consistency with the work plan.
- Transparency of the budget, i.e. the cost items should be sufficiently described.
- Extent to which the project environmental impact is considered and mitigated, including through the use of green procurement. The use of recognised methods for the calculation of the project environmental footprint (e.g. PEF or OEF methods or similar ones, such as PEFCRs/OEFSRs) or environmental management systems (e.g. EMAS) would be an asset.
- Value for money of the proposal.

• The project consortium has sufficient experience, competence and capacity to implement the work plan effectively and to achieve the expected results. The project´s operational and management structures are sound, controlled by the coordinating beneficiary and assessed to be effective.
• The budget is overall justified and coherent and costs are appropriate to carry out the work plan by the means proposed. The funds allocated to the work packages are adequately explained and balanced. However, some costs for external assistance seem overestimated and are insufficiently explained/justified, namely the outsourced administrative assistance for the coordinating beneficiary at a cost of €170,000 (WP1), which is the cost of almost 55 person-months for management activities.
• The project consortium commits to adequately apply green project management principles, by applying the Green Public Procurement (GPP) to choose (when possible) environmentally friendly goods, services and works, to contribute to sustainable consumption and production; the environmental impact of the project will also be considered and mitigated, with recognised methods for the calculation of the project environmental footprint (PEF). The proposal presents a clear delivery mechanism for its implementation. However, a GPP related deliverable is not included.
• The proposed budget is generally assessed to be reasonable and represents excellent value for money in relation to the scale and dimension of expected environmental benefits and results to be achieved. In particular, the project impact would demonstrate and replicate new environmental solutions in Italy, by processing a difficult to manage side-stream from the beer brewing process, into biopolymers, and providing an eco-friendly alternative to non-biodegradable fossil-based plastics.

Criterion 5 - Bonus points

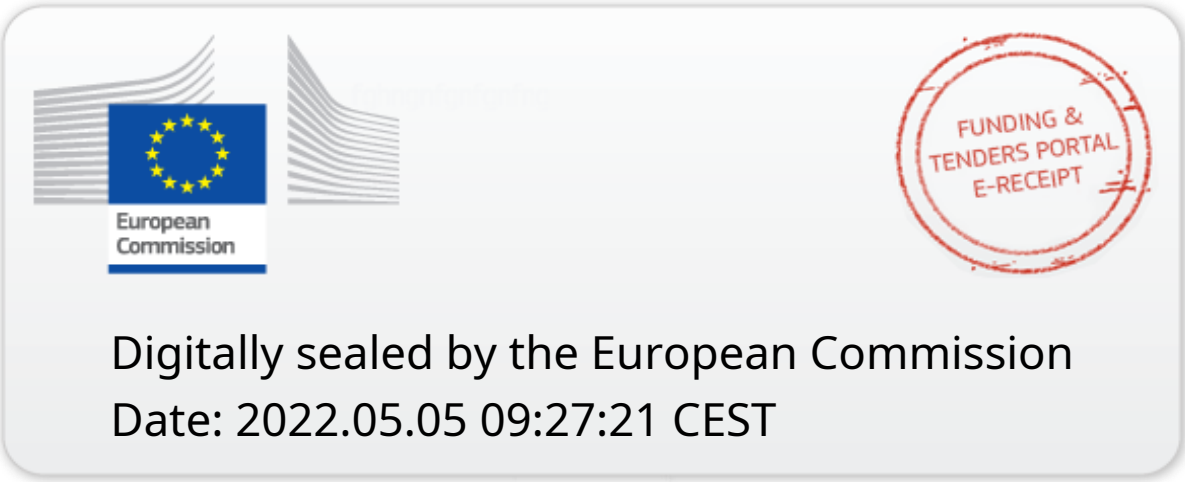
Score: **2.00** (Threshold: 0/10.00 , Weight: -)

The following aspects have been taken into account:
BONUS 1: The proposal offers exceptional synergies and promotes significant co-benefits between LIFE sub-programmes. (2 points)
BONUS 2: The proposal is primarily implemented in the Outermost Regions. Where specific regional features are relevant to the needs addressed in the call for proposals, e.g. islands for waste, coal-intensive regions for clean energy, etc., the bonus could be extended to other geographical areas with specific needs and vulnerabilities. (2 points)
BONUS 3: The proposal substantially builds on or up-scales the results of other EU funded projects. (2 points)
BONUS 4: The proposal offers an exceptional catalytic potential. (2 points)
BONUS 5: The proposal envisages a transnational cooperation among Member States essential to guarantee the achievement of the project objectives. (2 points)

• Although the proposal offers possible synergies and/or co-benefits between the LIFE sub-programmes of Environment and Climate Action, it does not sufficiently describe or justify these as making an exceptional contribution to the objectives of European environmental policy and legislation.
• The proposal is not being implemented in the outermost regions of the EU or in other areas with specific needs or vulnerabilities.
• Although the proposal mentions taking-up results from other EU funded projects, it does not sufficiently describe or justify their substantial use and/or added value to achieving the project objectives.
• The proposal offers an exceptional catalytic potential for replication or upscaling of project results in the same or other sectors or places, because of the open replication business plan strategy, which includes dissemination of the business case on how to go scale up the production process in practical terms. This non-proprietary approach extends the potential benefit to a wide group, while increasing the potential to attract funding in very many similar projects in Italy and beyond.
• The project involves partners from one Member State only and activities are only implemented in Italy. It does not include essential transnational cooperation to guarantee the achievement of the project objectives.

Threshold Status - The score '-0.01' below exclusively indicates that the proposal only fails because it does not reach the minimum threshold of 55 points (sum of criteria 1-4). A '0.00' value has no meaning.

Score: **0.00** (Threshold: 0/0.00 , Weight: -)



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