

GUIDELINES
OPEN INNOVATION
CALL FOR
TEXTILE SUSTAINABILITY

OPEN INNOVATION CALL

PROMOTED BY

CLUSTER TECNOLOGICO MADE IN ITALY

PROMOTED BY

DECATHLON PRODUZIONE ITALIA

AND RADICIGROUP

Deadline: 28th July, 2023

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A) INTRODUCTION

The definition and the realisation of this Open Innovation Call was born from the desire to adopt adequate processes of Open Innovation to address particular challenges for the environmental sustainability for the textile industry field. The initiative wants to experiment with an action model that engages an innovation ecosystem that enables relationship channels and methodologies that promotes the collaboration between startups, research centres, innovators, inventors and dynamic entrepreneurial realities. In particular, two companies that are partners of the Cluster Made in Italy, are available to experiment this initiative.



RadiciGroup is a world leader in the production of a wide range of chemical intermediates, polyamide polymers, high performance engineering plastics and advanced textile solutions, including nylon yarns, polyester yarns, yarns from recovery and bio sources, nonwovens and devices of protection in the health and industrial fields. The main applications concern many industrial sectors including: automotive - electrical/electronic - consumer goods - clothing - furniture - construction - household appliances - sports.

(www.radicigroup.com/it).



Decathlon Produzione Italia is one of the most important national divisions of the Decathlon group, world leader in the designing, sale and distribution of sporting goods. It operates in the clothing, footwear and equipment sector for more than 80 sports and is present with almost 150 points of sale throughout Italy.

(www.decathlon.it/).

The Open Innovation activity has been structured according to the needs of these actions, with particular reference to **environmental sustainability** objectives, and defined the challenges of the Call that will be specified in the paragraph “*Areas of the Open Innovation Call*”.

B) PROMOTER

The promoter of “Open Innovation Call for textile sustainability” is **Cluster Tecnologico Nazionale Made in Italy**, with headquarters in Milan, via A. Riva Villasanta, 3 (below “MiniT”).

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C) TARGET

The purpose of the Call for Innovation is principally to extend the horizon analysis, evaluation and innovative action in different fields of the specific activities in the paragraph “*Areas of the Open Innovation Call*” that have the concept of **environmental sustainability** as common thread. In fact, the two entities involved have already started a significant phase of convergence, with important efforts, towards the sustainability goals and have intercepted in the open innovation action proposed by the Cluster Minita a methodology useful for further expanding their qualified innovation network and know-how.

The simultaneous presence of two players in the **textile supply chain** - RadiciGroup upstream with its manufacturing activity and Decathlon downstream with its product conception and distribution business, particularly in the sports sector - will make it possible to evaluate innovative proposals favouring the sustainability of a significant part of the textile supply chain.

The selected realities will form the preferential panel upon which launch a collaboration, development and synergistic prospect. In the last phase of the Open Innovation Call will be done a specific step (Connection Lab) aimed at verifying and structuring schemes of corporate collaboration - startups that can guide the activation of PoC (Proof of Concept) or other partnerships.

The Open Innovation path represents the first deepening step, mutual understanding between the corporate and the startup, with the direct involvement of the management, aimed at identifying a potential next deal. Therefore, it is possible that it will be required at the participant's realities, their willingness to have preliminary meetings, insights, face-to-face confrontation, in the MinIT facilities or in the headquarters of the MinIT or companies involved in the initiative (Novara, Desio).

D) RECIPIENTS

The Call is open for different types of entities:

- **Startup and SME** already established (ideally innovative Startups or innovative SME for Italy);
- **Business projects** not already established but that have already developed a structured reflection on the business idea;
- **Research groups** that are referring to public or private research bodies/institutions/organisations;
- **Innovators** intended as a single person (inventor, maker, researcher, students, freelancers, etc.) that are in possession of the necessary ownership linked to the innovation submitted.


E) AREAS OF THE OPEN INNOVATION CALL

In this paragraph are reported the scouting technological perimeters and the challenges on which will be realised the innovation strategies. Also, here will be listed, with suggestion purposes, some keywords that aim to provide further guidance - not exhaustive - relative to the scouting perimeter.

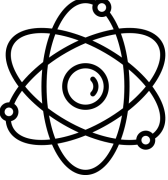
Interested parties can apply to the Call (in the conditions described in the paragraph “Guideline application form”) proposing the innovation in the various areas indicated by RadiciGroup and Decathlon.

THE CHALLENGES

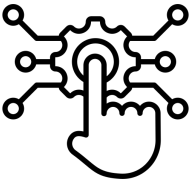
Relative to that scenario, the challenges on which solutions are sought with the Open Innovation action are:

|  <p>CIRCULAR ECONOMY</p> | <p>Are considered interesting technologies, solutions and applications capable of enhancing the impact and skills in the circular economy field of RadiciGroup and Decathlon Produzione Italia. In particular, we refer to recycling technologies (not only mechanical), sorting, cleaning, disassembly, de-manufacturing for the recovery of polyamide (PA) and/or polyester (PET) from textiles and plastics.. Furthermore, innovative proposals in the identification and removal of hazardous substances as well as in relation with traceability and eco-design.</p> |
|--|---|
| <p>SCOUTING PATHS KEY WORDS</p> | |
| <p>Sorting technologies</p> | <ul style="list-style-type: none"> ● spectrophotometric analysis ● infrared analysis ● automation sorting processes with artificial intelligence ● automation of sorting processes with computer vision ● automation of sorting processes with machine learning ● robotics made with malleable/flexible materials ● chemometric models |
| <p>Mechanical, chemical, biotech and thermal recycling technologies</p> | <ul style="list-style-type: none"> ● grinding ● dissolution ● depolymerization ● enzymes ● fermentation ● chain extenders ● compatibilizers ● new extrusion process ● fraying ● pyrolysis |
| <p>Cleaning technologies</p> | <ul style="list-style-type: none"> ● removal of contaminants ● removal of dyes and finishing additives ● surface treatments (waterproofing, softeners, hydrophilic treatments, etc.) ● removal of residual elements ● mycoremediation |
| <p>Disassembling technologies</p> | <ul style="list-style-type: none"> ● dismantling ● nondestructive disassembly |
| <p>De-manufacturing technologies</p> | <ul style="list-style-type: none"> ● destructive and nondestructive disassembly ● extraction of raw materials ● crushing and separation of materials (mechanical, electrical and magnetic) ● CoBot for disassembling ● robotics for moldable materials ● cyber-physical systems for material sorting |

| | |
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| Ecodesign | <ul style="list-style-type: none"> • CAE solutions (Computer-aided engineering) • LCC (Life Cycle Costing) • LCA (Life-Cycle Assessment) • LCD (Life Cycle Design) • PEF (Product environmental footprint / impronta ambientale prodotto) |
| Traceability technologies (physical solutions) | <ul style="list-style-type: none"> • chemical markers • electrophysical markers • innovative physical tracers |
| Hazardous identification/removal technologies | <ul style="list-style-type: none"> • hazardous identification technologies • hazardous substitution technologies • elimination of residual substances • elimination of contaminant / pollutant substances |

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|  MATERIALS | <p>The attention concerns the possibility to identify materials, new materials, biobased (non-competitive with food uses), recyclable but also composites and multi-materials that have the characteristics of environmental sustainability. Furthermore, are of interest the solutions, technologies and know-how referable to the field of additives, intermediates and pigments, which are also useful for achieving environmental sustainability objectives for the production of polymers. Finally, aspects of innovation (on any aspect) focused in particular on polyamide and polyester are also considered important.</p> |
| SCOUTING PATHS | KEY WORDS |
| Polyamide and Polyester | <ul style="list-style-type: none"> • innovation related to any aspect of polyamide (PA) • innovation related to any aspect of polyester (PET) |
| Bio-based and recyclable materials/polymers (no competition food) | <ul style="list-style-type: none"> • first generation bio-based polymers • second generation bio-based polymers • third generation bio-based polymers • oil based alternative polymers with sustainability claims • services appropriate to the textile sector • from renewable sources agri-food • organic waste - urban solid FORSU • biopolymer design |
| Multi-material, composite and recyclable materials | <ul style="list-style-type: none"> • bio-composites (matrix and reinforcement) • easy recycling materials • ease to separate • recyclable eco-compatible materials • multi-material materials compatible for recycling |
| Biodegradable materials | <ul style="list-style-type: none"> • composting • burial • sea water / fresh water • anaerobic techniques (biogas) • trigger / initiation degradation techniques |

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| | <ul style="list-style-type: none"> ● microorganisms (fungi / bacteria / mould) |
| Additives / Intermediates / Pigments | <ul style="list-style-type: none"> ● bio-based solutions ● solutions for additional functional features ● functionalizing additives to improve dyeability ● innovative technologies for dyeing ● additives to increase degradability ● recycling compatibilizers |

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|  DIGITAL | <p>Regarding digital, are of interest a vast range of solutions that are capable of affecting various aspects of the textile supply chain represented upstream by RadiciGroup and downstream by Decathlon. For this reason, solutions and technologies that can affect, with particular reference to environmental sustainability, both the processes (smart manufacturing) and products (smart products) of a manufacturing company such as RadiciGroup and a worldwide distribution company such as Decathlon Production Italy. In addition to the products and processes, innovations and digital solutions capable of enhancing the traceability of the corporations involved.</p> |
| SCOUTING PATHS | KEY WORDS |
| Traceability technologies (digital solutions) | <ul style="list-style-type: none"> ● extended producer responsibility (EPR) ● distributed ledger technologies (with proof of stake) ● digital passport ● chain of custody systems ● supply chain traceability ● RFID applied to textile ● data space technologies ● phygital traceability ● phygital NFCs ● cryptographic tracking tags ● anti-counterfeit systems & services ● smart labels ● traceability data management |
| Smart manufacturing for textile | <ul style="list-style-type: none"> ● IoT solutions ● smart textiles ● smart textiles & sensors ● meta wearables ● applications of digital twins and simulations to chemical/biological production or disassembling/recycling processes ● rapid tooling ● data-driven smart manufacturing ● data-driven demanufacturing ● applications of predictive AI to chemical or biological manufacturing / demanufacturing processes ● computer vision for recycling ● nanosensors ● natural user interfaces |

| | |
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| | <ul style="list-style-type: none"> • sensor embedding in filati and tessuti • data analytics/ data science / artificial intelligence/ augmented reality |
| Smart product | <ul style="list-style-type: none"> • smart materials • smart textiles & sensors • rapid prototyping • digital twin solutions • MEMS technology (microelectromechanical systems) • wearable technology • phygital goods |

|  <p>BUSINESS MODELS</p> | <p>This section highlights the interest of RadiciGroup and Decathlon Produzione Italia in intercepting, understand and possibly supporting companies that have conceived and implemented new business models linked to sustainability. In particular, reference is made to the ability to apply R-Strategies, reuse, post-consumer management, also with reference to logistics and packaging. Furthermore, initiatives/solutions/technologies that allow sustainable management of the supply chain as well as ways of servicing production and sharing (sharing economy) between different subjects. Finally, solutions capable of increasing compliance with legislation in the field of environmental sustainability, in particular national and European, are also considered relevant.</p> |
|---|--|
| SCOUTING PATHS | KEY WORDS |
| Regulatory compliance | <ul style="list-style-type: none"> • innovative solutions and business models implementing European/ National legislation |
| Products/materials reuse | <ul style="list-style-type: none"> • solutions and business models for reuse • solutions and business models for recycling • solutions and business models for post-consumer management • upcycling solutions and business models • return logistics solutions and models • R-Strategies solutions and application models • circular packaging solutions and models |
| Servitization / Sharing economy | <ul style="list-style-type: none"> • phygital goods • data-driven business model for wearables • platform business model • product/material rental solutions |
| New models of supply chain | <ul style="list-style-type: none"> • solutions and models to manage reshoring policies • customised and just in time production solutions and models • circular supply chain solutions and models |

F) OPEN INNOVATION CALL TERMS

i) MODALITY

The application needs to be submitted online, through a specific **application form** which can be found at www.clusterminit.it (below the “Portal”) and this link <https://bit.ly/43PSo8r>, providing the requested data in a comprehensive, correct and truthful manner. The correct compilation of all the data required in the online form is necessary to participate at the “Open Innovation Call for Textile Sustainability” and it is also required the submission of the Release for participation and delivery of the signed Proposal.

ii) DEADLINE

Each person that wishes to participate in the selection process of the Open Innovation Call, needs to submit your application to MinIT, by the 28th of July, 2023.

iii) MILESTONE

The principal steps of the Call will be:

1. **Selection:** from the beginning of May till the end of July (deadline 28th of July) it will be possible to access the online platform to send applications and to contact the scouting team for support information.
2. **Short List/Demo day:** the selection activity will result in a reduced list of initiatives of interest - indicatively, it is possible to imagine one for each area of interest - which will have the possibility to start a discussion with the management of the promoting companies.
3. **Connection Lab:** for the two champion proposals identified respectively by RadiciGroup and Decathlon Produzione Italia, a path will be activated (one-month) aimed at a guided in-depth analysis for the definition of a possible Collaboration Plan and/or creation of Proof of Concept (POC) with the companies promoting the Call.

iv) GUIDELINE APPLICATION FORM

It is possible to apply at: <https://bit.ly/43PSo8r> where it will be required in which area the project fits (circular economy, sustainable materials, eco design, digital for sustainability, new business models).

The application is completed by providing information relating to the categories listed below.

| | |
|--|--|
| <p><i>Preliminary information of the project contactor</i></p> | <ul style="list-style-type: none"> ● Signed release (upload) ● Name and Surname ● Email / Phone number ● Title of the project ● Open Innovation Challenge ● Information of the proposing subject ● CV of the proposing subject ● Proposing category (startup / SME / business project / research group body / individual innovator) |
| <p><i>Application as: startup, SME, business project</i></p> | <ul style="list-style-type: none"> ● Name of the company / startup / business project ● Field ● Brief description of the company / business plan ● 2022 Total revenue ● Number of employees ● Description of the added value of the proposal ● Project Status proposal (Business Idea / Prototype / Market test / on the market) ● Enterprises segment ● Website ● Attachment 1 - General presentation of the company ● Attachment 2 - In-depth analysis of the open innovation call ● Attachment 3 - Other documents (that are relevant for the proposal) |
| <p><i>Proposal Company, Organization, Research Group</i></p> | <ul style="list-style-type: none"> ● Name of the research group ● General description of the research group ● Website ● Description of the technology - Innovation ● TRL - Technology Readiness Level ● Possible applications ● Other elements of interest ● Intellectual property information ● Team ● Attachment 1- In-depth material ● Attachment 2- In-depth material (Ex. publications, articles) |
| <p><i>Application as innovator</i></p> | <ul style="list-style-type: none"> ● General Informations (professional activity and background) ● Description of the Technology / Innovation ● Applications ● Other elements of interest ● Intellectual property information |

- Attachment 1- In-depth material
- Attachment 2 - In-depth material (Ex. publications, articles)

In case of issues in the compilation of the online form please write an email at info@clusterminit.it

G) DISCLOSURE

The Call, its implementation methods, together with these Regulations and information relating to the processing of personal data, will be disclosed and published on the website www.clusterminit.it and on the related official social media channels of MinIT for the entire duration and until the end of the initiative.

H) INTELLECTUAL PROPERTY RIGHTS

Each participant is responsible for the content of the project presented and guarantees to be the owner of it and to claim, as an original title, all the relative rights of use. MinIT is in no way responsible towards third parties regarding the contents of the Projects. The candidates are obligated to indemnify and keep MinIT and its partners harmless from any request, including compensation for damages, which could be made for any reason by third parties in relation to the Projects.

MinIT assumes no responsibility for technical, hardware or software malfunctions, interruptions of network connections, failed, incorrect, inaccurate, incomplete, illegible, damaged, lost, delayed, misdirected or intercepted user registrations or for registrations of participants who, for whatever reason, have not been received, electronic or other communications that have been delayed or about other technical problems connected to the registration and uploading of content in the context of this initiative.

After completing the application form of this Call, for all the technical-scientific and business needs of the candidate, there is the possibility of drafting and exchanging specific NDAs (non-disclosure agreements) between the parties for the protection of privacy and intellectual property rights.

I) DISCLOSURE PURSUANT TO THE PERSONAL DATA PROTECTION REGULATION.

Pursuant to Regulation 2016/679/EU (General Data Protection Regulation - hereinafter referred to as "GDPR"), the Cluster Nazionale Made in Italy (MinIT) provides, below, the information regarding the processing of personal data including those provided in the release and form prepared to participate in the Call called "Open Innovation Call for Textile Sustainability" (hereinafter referred to as "Call").

1. Purpose of processing and its legal basis

Personal data provided by Applicants (e.g.: names, contact details of founders, researchers, innovators or startups, any data in the proposed solution including images/photos and videos) will be processed by the Cluster MinIT for the following purposes:

- Making participation in the Challenge possible;
- Managing Challenge-related activities, including but not limited to:
 - Administrative management;
 - Communications and re-contacts to participants in all stages of selection up to the final;
 - Delivery of awards to eligible participants;
 - publication of the image/photo for the winners on:
 - Social Network Cluster MinIT;
 - <https://www.clusterminit.it/> website
 - screen and company press notes;
 - handling any requests and/or complaints
 - handling any requests and/or complaints

This is without prejudice to the data subject's right to communicate his/her wish to revoke this authorization at any time. Applicants' data may also be processed by the Cluster MinIT in order to assert or defend its own right in court, as well as to comply with obligations under laws, regulations or EU legislation. The provision of such data is necessary to make participation in the Call possible: failure to provide such data, in part or inexactly, may result in the inability to participate in the Call.

2. Data Retention

Cluster MinIT will retain the personal data of Candidates for the period strictly necessary for the execution of the Call and, in any case, no longer than 12 months after the end of the Call, without prejudice to any additional period required by law for administrative purposes, handling of any complaints and litigation.

3. Data Processing

Data processing will be carried out manually and/or through computer and telematic tools with logics of organization and data processing related to the above-mentioned purposes and, in any case, in such a

way as to ensure the security and confidentiality of the data.

4. Data controller and data processors

The data controller is the Cluster Nazionale Made in Italy with headquarters at Via A. Riva Villasanta, 3 - 20145 - Milan. Personal data will be processed by employees or collaborators of Cluster MinIT who have been appointed as persons authorized to process personal data and have received, in this regard, appropriate operating instructions.

5. Categories of third parties to whom the data may be disclosed as Data Controllers or who may become aware of them as Data Processors.

In addition to employees or collaborators of the Cluster MinIT, some data processing may be carried out by third parties, to whom the Cluster MinIT entrusts certain activities (or part of them) in order to pursue the purposes mentioned in point 1). These parties will act as autonomous Data Controllers or will be designated Data Processors and may be included in the following categories:

- Partners in the innovation ecosystem;
- Consultants (e.g., experts, professors).

6. Right of access to personal data and other rights

The Candidate concerned has the right to access at any time the data concerning him or her and to exercise the other rights provided for in Articles 15 to 22 of the GDPR (to request the origin of the data, rectification of inaccurate or incomplete data, restriction of processing, deletion or oblivion, portability of data, as well as to object to their use for legitimate reasons) by sending an e-mail to info@clusterminit.it. Finally, the data subject has the right to lodge a complaint with the Data Protection Authority.