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Regional Hub Ecosystem Investment strategy



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EXECUTIVE SUMMARY

This Regional Hub Ecosystem Investment Strategy presents the blueprint of the five RegioGreenTex (RGT) Regional Hubs and sets out how they can continue to operate and grow beyond the project's lifetime. The document is Deliverable 5.3 of the I3 RGT project and functions both as a consolidated business plan for the hubs and as a replicable blueprint for other European regions aiming to establish dynamic, self-sustaining ecosystems for textile reuse and recycling.

Each hub has actively engaged in validating, piloting, and demonstrating innovations at Technology Readiness Levels (TRL) 6–9. Through their activities they have mobilized SMEs, established cross-regional value chains, piloted advanced recycling technologies, and built communities that provide long-term benefits to the regional textile ecosystem. However, the Hubs also have demonstrated their diverse strengths:



Figure 1: RegioGreenTex Hubs

Lowlands Hub (NL, BE, FR): advancing mixed textile waste recycling, cross-regional business cases, and chemical recycling pilots for cotton/PET and aramids.

Italy Hub (Tuscany & Piedmont): leveraging strong wool traditions and infrastructures in Prato and Biella, complemented by the service-oriented Italy GreenTex Hub (IGH) to integrate wool recycling technologies, new infrastructure, and SME services.

NERO Hub (North-East Romania): developing systemic zero-waste design solutions, digital B2B platforms, and traceability tools, while embedding

circularity in regional smart specialization strategies.

Portugal Hub (North Portugal): building advanced pilot lines for sorting, mechanical and chemical/enzymatic recycling, and engaging SMEs through prototyping services and industrial validation.

AURA Hub (Auvergne-Rhône-Alpes, France): implementing a quadruple-helix approach, piloting chemical PET recycling, developing eco-design and waste-prevention tools, and launching new services to connect SMEs, investors, and public authorities.

In addition to the five formal hubs, three associated regions; Västra Götaland (Sweden), Valencia and Catalonia/Barcelona (Spain) have shown hub-like characteristics throughout the project, mobilising stakeholders and infrastructures for textile circularity. Although not formally designated, these regions can be seen as replication actions of the RGT regional hubs ecosystem strategy and could be further developed into full RGT hubs.

The document consolidates each hub's approach to:

- Validating, piloting, and demonstrating innovations at Technology Readiness Levels (TRL) 6–9.
- Engaging new companies, especially SMEs, and other institutions beyond the current consortium.
- Building cross-hub and interregional collaborations to leverage complementary expertise and infrastructure.
- Defining the costs, investments, and funding mechanisms necessary for sustainable operations.

The investment strategy follows a three-phase structure, which is part of the Blueprint for a regional Hub:

- **Activities:** Identification, exploration, and description of hub functions, based on the Hub Inception Plans and RGT Deliverable 5.2. (Summary Annex II).
- **Business Plan Development:** Using the Business Model Canvas to define value propositions, key activities, resources, partnerships, cost structures, and potential revenue streams.
- **Funding Strategy:** Detailing actions to secure public and private financing, including subsidies, partnerships, and Extended Producer Responsibility (EPR) contributions.

All hubs underline the need for diversified funding strategies to ensure resilience and independence from single-source financing. Estimated costs vary widely based on the hub's structure but all include:

- **Fixed Costs:** Operational management, office functions, marketing, and communications.
- **Investments:** Training materials, digital tools, machinery, and lab facilities.
- **Flexible Costs:** Event organisation, expert support, certification processes, and cross-regional activities.

Funding strategies include membership models, cascade funding schemes, EPR contributions, and co-financed public–private projects.

While each hub operates within its unique regional and industrial context, several overarching strategic themes emerge:

- **Circular Value Chain Building:** All hubs are facilitating textile recycling pathways, from waste identification and sorting to fibre recovery and product (re)development.
- **SME Engagement:** Targeted outreach, training, and matchmaking activities ensure new stakeholders join and benefit from hub services.
- **Infrastructure and Knowledge Investment:** Physical hubs (e.g., Italy and Portugal) focus on machinery and processing facilities, while virtual hubs (e.g., Lowlands, NERO and AURA) emphasise coordination, networking and knowledge transfer.
- **Cross-Regional Collaboration:** Joint pilots, shared R&D resources, and policy alignment activities, such as the Circular Garment initiative, demonstrate the added value of coordinated efforts across Hubs, regions and EU member states.
- **Diverse Funding Sources:** The hubs plan to combine regional authority support, EU programmes (I3, Horizon Europe, Interreg), industry co-investment, and service-based revenue models to ensure financial resilience.
- **Funding Facilitation:** Hubs actively support companies and initiatives in identifying, organising, and connecting public and private funding. Both through collaborative subsidy projects and direct investments in individual businesses.

The hubs collectively represent a robust, pan-European network for textile circularity. Their coordinated action plans demonstrate how regional strengths can be combined to achieve systemic change. Maintaining this momentum requires:

- Continued public and private investment in shared infrastructure and innovation platforms.
- Formalising inter-hub governance and joint project development.
- Leveraging EU networks and thematic partnerships to influence policy and secure sustainable funding streams.

By embedding these strategies, the RGT hubs can act as enduring catalysts for innovation, competitiveness, and sustainability in the European textile sector.

Based on these insights the 6 main conclusions that can be drawn are:

1. The Hub service organizations and network of hubs show to have an added value
2. Hubs support the 3 I's : Interregional Innovation Investments
3. Sustainability of the Hubs requires a diversified funding mix
4. Hubs support green growth, industrial resilience and strategic autonomy
5. A blueprint has been developed that can be used by other EU regions
6. The base for a wide EU network has been built

Based in this conclusion the network of RGT hubs puts out a call to action for continuation of support from regions and the EU. More specifically this network recommends the following:

1. Support for current and new RGT Hubs
2. Support for EU wide network of RGT Hubs
3. Consider widening the scope of RGT Hubs

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INTRODUCTION

This document is part of the formal output of the I3 [RegioGreenTex](#) project. This document outlines the sustainability plan for the 5 RegioGreenTex Hub Ecosystems and the EU wide network of RegioGreenTex Hubs.

A RegioGreenTex hub is an organized ecosystem within the textile value chain which encourages investments and sharing knowledge. It is a supporting backbone of one or more regions within the EU that actively creates synergies between partners and within the regions to keep up and grow the circular potential of the companies. Part of the hub could also be a physical infrastructure where small and medium sized companies can collaborate to increase the possibilities for textile recovery and reprocessing. The hub serves as a crucial nexus connecting a diverse mix of triple helix partners. To find solutions a hub is pooling their capabilities, expertise, and machinery to foster collaboration and innovation. The ultimate goal of a hub is driving growth and development of the textile recycling ecosystem (see deliverable 5.1 [Deliverable 5.1 Regional hub ecosystem inception plan](#) summary Annex I). It should be noted that the core of a RegioGreenTex Hub lies in the collaboration and network among its partners. To facilitate this collaboration, a service-oriented organisation often plays a central role. Such a facilitator is not necessarily excluded to one type of actor: while it is often a neutral, service-oriented entity, companies or research institutes can also take on this role, provided they act as a facilitator rather than as an asset-owning or production-focused participant.

Based on this definition the 5 RGT hubs have their own specialization and focus, reflecting the strengths and needs of its regional ecosystem:

- **Lowlands (NL, BE, FR):** Focuses on mixed textile waste recycling, piloting cross-regional cases for workwear, flowcharts for post-consumer textiles, and cotton/PET feedstock management.
- **North Portugal:** Specializes in cotton recycling with a new Special Interest Centre, piloting fiber-to-yarn-to-fabric value chains validated at industrial scale.
- **Italy (Tuscany & Piedmont):** Builds on strong wool traditions, piloting recycled wool fibers for fashion and technical uses, supported by new sorting and shredding technologies.
- **France (Auvergne-Rhône-Alpes):** Advances chemical PET recycling and textile sorting facilities, linking SMEs with territorial and international value chains.
- **North-East Romania:** Virtual hub focused on zero-waste design and digital B2B platforms, enabling traceability, systemic design solutions, and marketplace connections.

The 5 hub ecosystems are also supported by the regions Valencia, Catalonia and Västra Götaland. These 3 regions will share their knowledge/facilities on textile recycling and can take learning from the 5 hub ecosystems.

This sustainability plan describes a pathway to 5 lively self-propelling regional hub ecosystems. Activities within these RegioGreenTex Hubs focus on activities to validate, pilot and demonstrate textile reuse and recycling at TRL 6-9 level. The plan includes for each hub investments and actions needed after the project ends. It also includes interhub and inter regional collaborations of this EU wide network of RegioGreenTex Hubs.

For this in the RGT project each regional hub ecosystem examined which supporting functionalities are needed and which would be effective to validate, pilot or demonstrate activities at TRL 6-9 level. The first phases of this blueprint, the functions of the RGT hubs, has been described in D5.1 (Summary Annex I) and in D5.2 (Summary Annex II) for each functionality pilot actions on a Regional Hub level have been listed. Based on this each hub as experimented further with these functions and underlying actions and more actively widened the participation to other SMEs. To this end, events and meetings have been organised by each hub internally. In addition, interregional workshops have been organised per hub to connect actors with similar interest or complementary needs and develop investment scenarios to be implemented during the project and beyond. In order to safeguard the activities of the hub and connect with the needs of the stakeholder, the hubs have collected the feedback from regional and European stakeholders but most importantly the feedback of the RGT SMEs.

This document and D5.2 can be used as a guide to ensure the concept and practical functionality of a hub. These are available in the future, even after the end of the RGT project. It therefore also can be a model or even blueprint for development and organisation of a region or regions that may have the appropriate characteristics.

In conclusion, this deliverable serves two key purposes: first, to present the RegioGreenTex Regional Hub as a replicable model for organising regional actors and fostering strong, value chain-based collaborations in textile recycling and sustainability beyond the project's duration. Second, for the 5 RGT Hubs it outlines the potential activities and associated financing opportunities forming the foundation for a plan for the stakeholders of each Hub that ensures the hub's continuity after the project ends.

1. FRAMEWORK

This plan is based on a framework outlining the essential activities a hub should undertake to end up with a basic investment strategy that is a crucial and integral part of the overall sustainability plan of a RegioGreenTex Hub. This framework has been put up more than one year before this document as a first draft of the Regional Hub Ecosystem Investment strategy.

The framework consists of the following distinct phases:

1.1 Phase 1: Activities; identification, exploration and description.

First step is the identification of possible activities of a hub; These activities should be based on the definition of a hub and the hub inception plan (D5.1). Outcome of this phase has been reported in Deliverable 5.2: Regional Hub Ecosystem Actions (Summary Annex II)

1.2 Phase 2: Business plan; cost, investments and revenue streams.

The definition of a business plan to ensure the continued operation of the regional hubs is based on the elements of the Business Model Canvas¹. The different elements of this model are: the value proposition, key activities, key resources, customer relationship, channels, key partners, customer segment, cost structure and revenue streams.



Figure 2: Business Model Canvas

¹ A Business Model Canvas (BMC) is a single-page template used to outline the goals and objectives of a business. As a strategic management tool, a BMC can help business owners and other stakeholders develop new business models or evaluate existing models.

Input for each element of the BMC can be derived from several sources but amongst others of course from activities of the RegioGreenTex project itself. Value sources of input are the value chain projects and workshops that bring together different stakeholders.

In relation to the hub sustainability, the most important BMC elements are costs, investments, and revenue streams, which can be used as the backbone of the financial part of the business plan. This financial part plays a crucial role in shaping the financial framework and ensuring the long-term viability of the investment.

Costs

The first element of the financial framework of a successful business plan lies in examination of costs. This involves a detailed breakdown of the financial outlays associated with hub activities. Costs should be outlined by functionality and or activity, with a focus on both monetary expenditures and the allocation of human resources in terms of hours. This comprehensive analysis allows stakeholders to gain a clear understanding of the financial implications of each initiative, facilitating strategic decision-making and resource allocation.

Investments

The second pillar of the financial framework of the business plan revolves around investments, addressing the physical and tangible assets necessary for the hub's operations. This encompasses machinery, building infrastructure, logistics, software and hardware etc. Critical components that underpin the effectiveness and functionality of the hub. A thorough evaluation of machinery requirements and construction needs ensures that the investment aligns with the strategic goals of the hub, fostering an environment conducive to innovation and collaboration.

Revenue streams

The third and equally vital aspect of the financial framework of the business plan is the detailed description of (potential) revenue streams. Successful hubs understand the importance of diversifying revenue streams to mitigate risks and ensure financial stability. Income sources may include financial support from regional authorities, subsidies, in-kind contributions from strategic partners, in-cash contributions of clients and revenue generated through EPR (Extended Producer Responsibility) systems. By tapping into a variety of funding channels, hubs can cultivate resilience and adaptability, reducing dependency on a single source of income.

In particular, regional authorities can play a role in providing financial backing and policy support, creating an enabling environment for hub initiatives. Subsidies offer another way to offset costs and promote the development of innovative projects. Additionally, in-kind contributions from partners enrich the hub's resource pool, fostering collaboration and leveraging the strengths of diverse stakeholders. Money generated from EPR systems further bolsters the financial foundation, emphasising sustainable practices and responsible resource management.

1.3 Phase 3: Funding; activities needed to finance business plan

Converting potential revenue streams in actual revenue streams is the final phase of the investment strategy. In this last phase activities should be planned to fund the Hub's business plan and secure the necessary financial support for the Hub. Through diligent execution of these tasks, the project aims to establish a solid foundation for sustainable growth and impact in the targeted region.

Based on this 3 Phase approach for each of the 5 Hubs the investment strategy has been specified in the following 5 Chapters by providing a detailed answer on the following 4 questions:

A. Description of Activities at the Hub Ecosystem Level (D5.2 Summary Annex II):

Provide a detailed description of the activities within the hub to validate, pilot, and demonstrate innovations at TRL 6-9. Specify how the hub engages new companies (including SMEs) and institutions that are not yet part of the project. Describe efforts to enhance collaboration within the project/consortium.

B. Opportunities for Collaboration with other Hubs/Regions (D5.2 Summary Annex II):

Identify potential collaboration opportunities with other hubs or regions that could strengthen the hub. Outline specific initiatives, shared resources, or strategic partnerships.

C. Investments and Cost Overview:

Detail the investments required for the above activities, including expected costs for implementation, staffing, infrastructure, or other resources.



Figure 3: Regional Cluster Workshop Lyon

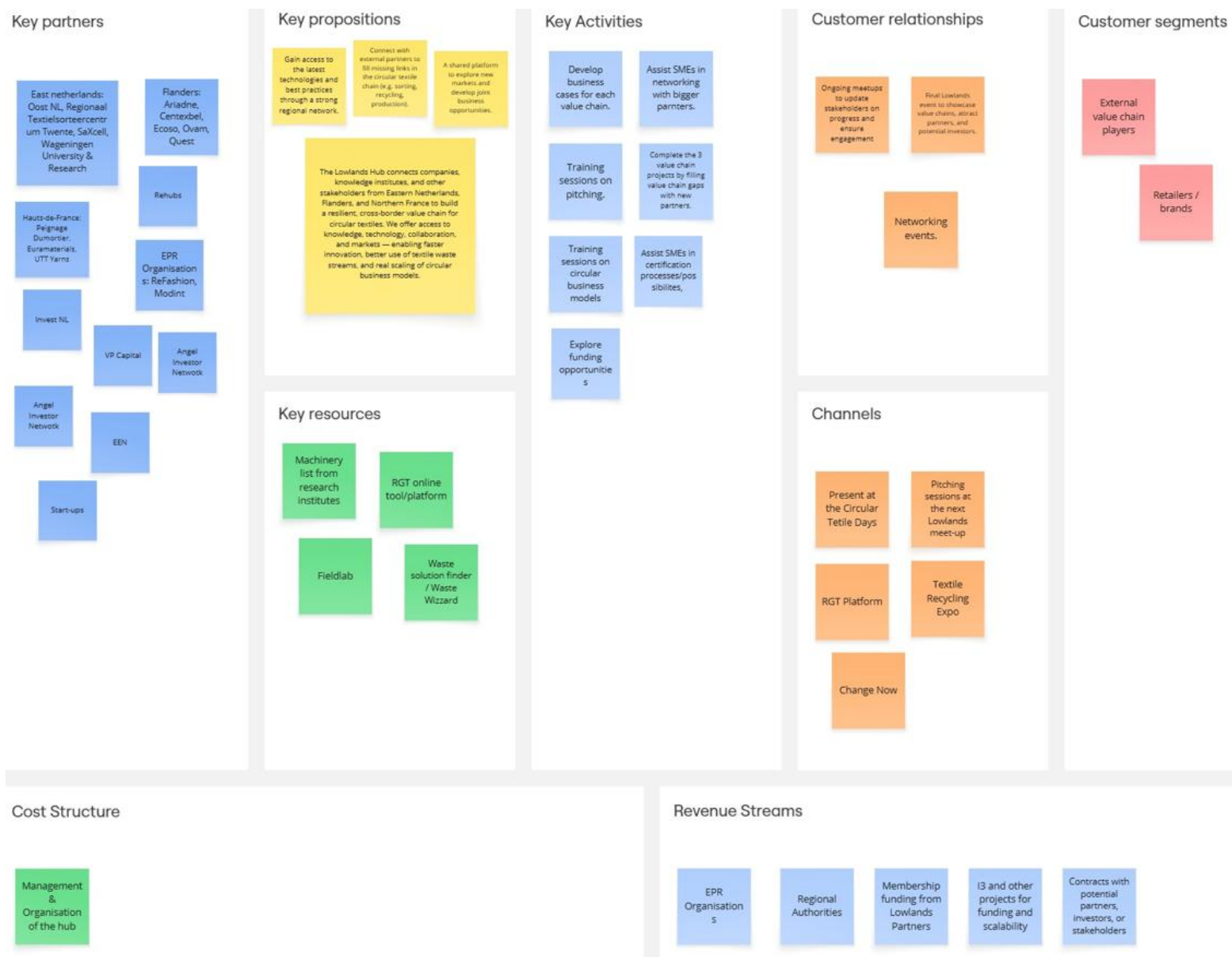
During the Regional Cluster workshop in Lyon, June 2025, the hub leaders defined in more details the investment and cost overview for their Hub. The results are presented in the coming chapters.

D. Actions for Securing Funding After the Project Ends:

Outline the necessary actions to secure funding for hub ecosystem activities beyond the project's duration. Identify potential funding sources, such as public grants, private investments, or industry partnerships.

2. LOWLANDS GREENTEX HUB: BUSINESS PLAN FOR HUB INVESTMENTS

Business Model Canvas Template



The details of this model can also be found in Annex III.

2.1 Description of activities at the hub ecosystem level for the Lowlands

GreenTex Hub

Below you will find a detailed description of the activities within the Lowlands Greentex Hub to validate, pilot, and demonstrate innovations at TRL 6-9. Specified how the hub engages new companies (including SMEs) and institutions that are not yet part of the project. Efforts are described how to enhance collaboration within the project/consortium.

The Lowlands Greentex Hub is unique because it operates in 3 different countries. It unites the former flax textile regions of the lowlands of the Netherlands, Belgium and North of France. In the past 40 years, the large production capacity that used to characterize the region, has all disappeared. Currently, quite some textile related industries are active in these regions, although they tend to be smaller and more specialised than they used to be. Now the transition to a circular bioeconomy provides new economic chances for these regions. The Lowlands Greentex Hub can stimulate this transition.

The RGT project showed and proved the Hub is able to validate, pilot, and demonstrate innovations from TRL 6 to 9 by:

1. Building circular textile value chains for:

- Development of business cases for circular value chains: All value chains were centered around post-consumer textiles. RTT and Ecoso (sorters) tested sorting and delivery of post-consumer cellulosic textiles to Saxcell for chemical recycling. Quest explored the development of Circular Merch, collaborating with RTT and Ecoso for sorting. In Hauts-de-France, the value chain focused on aramids (from firefighter textiles), establishing the link between Peignage Dumortier (sliver preparation) and UTT (spinner), with potential to expand into other regions.
- Support in bridging value chain gaps with new partners.
- Support in product-to-market implementation by identifying potential end markets and customers, and facilitating connections with relevant partners for go-to-market and commercialization.
- Offer support to companies that want to collaborate with one of the other Lowlands regions.

2. Attracting public and private investments by building consortia for:

- Guidance on funding opportunities.
- Formation of cross-regional research project consortia.
- Implementation of cascade funding mechanisms.

3. Attracting individual investments by connecting the financial sector:

- Connect investors with individual partners (e.g. Saxcell)

4. Capacity building (competences) by:

- Training sessions on pitching and business presentation.
- Organization of business/investment/knowledge-sharing events.
- Assistance for SMEs in certification processes.
- Information sharing on regional waste policies to support cross-regional collaboration.

5. Building a community that offers SMEs:

- Coordination to present joint policy document on circular textile in European Week of Regions and Cities.
- Networking support for SMEs to connect with larger and cross regional partners.
- Alignment with other regional hubs to create synergies.
- Sharing of event calendars and collaborative sessions.
- Establishment of an R&D Committee.



Figure 4: Saxcell presenting their pilot during the EWRC.

2.2 Opportunities for Collaboration with Other Hubs/Regions

The Lowlands hub itself represents the opportunities of cross region and cross-country collaborations based on synergies in capacities, know-how and markets. Partners from the 3 Lowlands regions and countries have played a crucial role in the realisation of the RGT circular garment (www.thecirculargarment.eu). The driver for putting together the policy brief presented in October 2024 also emerged from these 3 lowlands regions. Partners from the Lowlands hub also collaborated with the Swedish region for the development of the Waste Wizard tool which aims to boost efficiency in textile leftovers valorisation, across the R-ladder, across the regions. A promising first concept has been elaborated, and the partners will continue the developments as legacy of the RGT project. Complementing the Waste Wizard Developments, a policy guide was created by OVAM around cross-regional waste legislation. Following



Figure 5: The Circular Garment

the demand for a clear overview of R&D infrastructure in the different regions, supporting the R&D activities from the regional partners, a R&D infrastructure list was created with input from all regions. To create maximal impact, this Infrastructure list was embedded into the RegioGreenTex digital tool, accessible to both project partners and the broader public. The list remains in evolution as more assets continue to be added. Several strong examples of a strategic partnership enabled by the structure of the hub.

2.3 Investments and cost overview

The cost structure of the Hub can be broken down in the following 3 elements:

- Fixed costs: Operational management, office cost and marketing and communications to build hub visibility
- Investments: Development of training materials and knowledge tools but possibly also costs for machinery and other R&D infrastructure that can be used by partners
- Flexible costs such as costs for organizing events, meetups, and trade fair participation and costs for providing expert support and advice and use of machinery from e.g. knowledge partners.

It is estimated that the minimal total cost for running a Hub including depreciation of investments and flexible costs are about 235 k / year and 2400 hours (or 0,5 FTE per region). These numbers are based on:

- The basic cost for running the Lowlands Greentex hub for the 3 regions. These costs are estimated at 73 k / year for the operational team, overhead and basic out of pocket cost.
- The flexible costs are estimated at 162k per year for Ecosystem support, Training & Tools and SME support.

D 5.3 Regional Hubs Ecosystems Investment Strategy

The table below provides a more specific overview of the main costs the Lowlands Greentex Hub will have to deal with when fully operational.

Type of Investments	Estimated value	Hours / year	Description
Operational team	€ 54.000,00	600	200 hr/region times 3 regions. Operational management, office cost and marketing and communications to build hub visibility.
Overhead	€ 9.000,00		Such as office rent and appliances.
Out of pocket	€ 10.000,00		Such as costs for organizing events, meetups, and trade fair participation.
Ecosystem support	€ 64.800,00	720	Support in building value chains, Public Private Partnership (subsidy) projects, etc.
Training & tools	€ 32.400,00	360	Specialist team for development of training materials and knowledge tools.
SME support	€ 64.800,00	720	Costs for hiring experts and possibly also machinery and other R&D infrastructure that can be used by (SME) partners.
Total	€ 235.000,00	2400	

2.4 Actions for securing funding after the project ends

Below the necessary actions are outlined to secure funding for hub ecosystem activities beyond the project's duration. Potential funding sources are identified, such as public grants, private investments, or industry partnerships.

In the table below the potential revenue streams for the Hub are listed.

	Fixed cost	Investments	Flexible cost
Regional authorities	x	x	x
Extended Producer Responsibility organizations	x	x	x
Regional or national industry organizations	x	x	x
North Sea Interreg, I3 and other EU subsidy		x	x
Regional and national subsidy		x	x
Strategic investments from partners / stakeholders		x	
Service contracts			x
Fee-for-service model for in-person support			x
Event participation fees			x

Analysing the options it appears that:

Fixed costs: for a standalone hub funding for the fixed costs should be provided by regional authorities. The fixed cost of a hub also could be funded by EPR organizations such as UPV Textiel (Netherlands), Refashion (France) and Retexbel (Belgium). Also, it could be envisioned that the Hub is integrated within one or several regional or national industry organisations such as Modint or Fedustria.

Investments: Funding for investments such as webtools, information guides, courses and or machinery, the previously mentioned organisations could play a role. In addition to these organisations, specific partners from the hub that have special interest could also (partially fund the investments. For instance, specific companies could help with the funding of machinery or knowledge institutes could help create courses if they will be paid for providing the courses. This type of investment could also partially be paid by subsidy schemes such as Interreg North Sea region, I3 or other EU funding schemes. Also, national or regional subsidy programmes could be interesting if these accept cross national cooperation. In this respect it is interesting to explore the possibility for Flanders and the North of France region to join the Vinnovate initiative.

Flexible costs: Most options seem to be available to fund the flexible costs. Apart from all the options mentioned previously, (partial) funding can be received from Hub partners. Payment can be either by membership / service contracts or a fee-for-service model. In this respect it is interesting to mention that funding for an event seems to be easier to pay than a fee for service and service contract.

It is also interesting to find out if a membership model could be set up in which partners pay a fee and that this fee is doubled with a subsidy from the government and for this fee 50% is used for 1-on-1 support and 50% for general / joint activities. In this way the partner pays for a certain amount of 1on1 service but gets the general and joint Hub activities as an extra.

The core Hub partners Oost NL, Ariadne, Centexbel and Euramaterials have put up the following strategy and outline for the necessary actions that can be taken to secure funding for hub ecosystem activities beyond the project's duration.

Step 1:

Prepare the sustainability plan for the hub (this chapter of D5.3) with key elements:

- Activities based on the MIRO Board.
- Opportunities for collaboration: Identifying synergies with other hubs and regions.
- Cost and investment Details: Outlining the necessary investments and expected implementation costs.
- Funding Strategy: Defining actions to secure funding.

Step 2:

Consult the 3 regions about the willingness to fund the fixed costs of the Lowlands hub (total 90 k / 30k per region). Political context: There is strong political will to enhance collaborations between Hauts-de-France and both Flanders and the Netherlands (mostly on a national level). However, there is limited bottom-up activity. The Lowlands Hub is currently the only structured initiative actively working on this. Making it attractive to policymakers on a national level. Since the hub should be a supportive structure for companies, not an independent, standalone organization, explore interest with EPR, industry organizations and knowledge institutes to join the hub.

Explore together with regional authorities and current and new (potential) partners the idea of setting up a cascade funding project across the 3 regions that partially pays for the cost of the hub and provides funding for SMEs. Potential funding sources could include Interreg North Sea Region, CrossRoads, EPR, etc.

Step 3:

- Organize a signing ceremony during the closing event and formalized collaboration between the three regions with an alignment on;
- Funding for the fixed costs of the Lowlands hub
- Building a consortium, write a proposal covering for investments and flexible costs and submit this proposal for a funding scheme
- Organizing joint activities and events
- Establishment of an R&D scientific committee for cross-regional projects
- Support to SMEs interested in collaborating with partners across regions.

3. ITALY GREENTEX HUB: BUSINESS PLAN FOR HUB INVESTMENTS

Business Model Canvas Template



The details of this model can also be found in Annex III.

3.1 Description of activities at the hub ecosystem level

Below you will find a detailed description of the activities within the Italy Greentex Hub to validate, pilot, and demonstrate innovations at TRL 6-9. Specified how the hub engages new companies (including SMEs) and institutions that are not yet part of the project. Efforts are described how to enhance collaboration within the project/consortium.

Within the RegioGreenTex initiatives, Prato (Tuscany) and Biella (Piedmont) chose to move toward the development of an integrated ecosystem for textile waste valorisation where the hub becomes the central node. This ecosystem is structured on two levels: regional infrastructures and a non-physical coordination and service platform known as the Italy Greentex Hub (IGH). These initiatives aim to integrate infrastructure, innovation, and local ecosystems, building capacity to meet both industrial needs and emerging regulatory challenges.

In this two-level architecture, the IGH acts as an enabler of textile circularity through the Recycling Hubs. The IGH aims to become a distributed, service-oriented ecosystem that connects, supports and enhances the performance of physical hubs by offering transversal and strategic functions.

Its business model canvas outlines a clear framework for enabling textile waste valorisation through services, partnerships and innovation infrastructure and it is based on the following ambitious Value proposition *“To build a competitive market for high-quality recycled wool through an integrated, innovation-driven circular textile hub that transforms textile waste into valuable applications, supports SMEs, and accelerates sustainable industrial transformation in Italy and beyond. In addition, the hub commits to the transfer of know-how and capacity building, aiming to strengthen circular skills across the textile sector. This includes technical expertise on wool recycling, selection and processing of textile waste, both post-industrial and post-consumer”.*

The RGT project showed and proved the Hub is able to validate, pilot, and demonstrate innovations from TRL 6 to 9 by:

1. Building circular textile value chains for:

- Analysis, selection and pre-validation of sorting technologies, in line with the most relevant textile flows that will be treated in the IGH.
- Mapping of the most relevant textile waste flows, both qualitatively and quantitatively, with a focus on wool-based waste.
- Attracting public and private investments by building consortia for:
- Initial funding scouting and EU project submissions for consolidating the neo-Rehub ecosystem and developing innovative technologies for the waste valorisation.

2. Capacity building (competences) by:

- Identification of recycling potential through technical and sustainability assessment models (IoR: Novel Index that measures the potential of recyclability of textile waste families, post-sorting phase)
- Catalogue of available recycling technologies and transformation processes, classified by type and position in the value chain.
- Piloting of new transformation processes/innovative recycling application based on the most relevant textile waste families
- Definition of the service ecosystem and list of services of the RGT Hub (hard and soft).
- Pilot activities involving Italian SMEs part of the RGT Consortium.
- Establishment of a pool of experts for R&D and testing in regional labs
- Co-Designing the Future: innovative learning tool developed with the University of Florence bridging academia, industry, and sustainability, and cultivating a new generation of designers trained to approach textile waste not as a problem, but as a design opportunity.

3. Building a community that offers SMEs:

- Cross-fertilization actions through events such as EcoMondo and Milano Unica in Italy, Textile Recycling Expo in Brussels.

Building upon the foundational activities already completed, the IGH will enter a new consolidation phase. This transition shifts the focus of the hub from initial ecosystem design and mapping efforts to the activation and validation of its service portfolio, the deployment of piloting technologies and the strategic engagement of new actors and funding sources.

The IGH Business Model Canvas is a comprehensive framework that delineates the final phase of the process, which is to evolve the hub into a fully operational, service-oriented ecosystem for a long-term sustainable impact.



Figure 6: EcoMondo Fair

The model prioritises a distributed infrastructure supported by shared competences and investments, enabling circular textile innovations to move toward TRL 6–9. These piloting and demonstration activities are designed to validate not only technologies, but also service models and circular applications beyond RegioGreenTex:

1. Creating a market by building circular textile value chains for:

- Validation of recycling processes for wool and blends (TRL 7–9), with targeted applications in sectors such as construction, packaging, furniture and automotive. Prototypes and functional demonstrators will be developed with SME partners, in primis involved in the RGT Consortium.
- Co-design and market activation for pilots, where textile waste streams are transformed into prototypes and tested.

2. Attracting public and private investments by building consortia for:

- Boosting pathways to investment to exploit public and private funding instruments.

3. Capacity building (competences) by:

- Pilot testing of innovative sorting technologies for improving classification precision of wool waste and other types of fibers.
- Validation of services such as Material testing, certification support and pilot product development.
- Feasibility study and roadmap for the creation of recycling hubs in non-IGH regions, using the Italy hub model as a replicable reference (replicability).
- Validation of a training and testing programme for SMEs includes access to dismantling stations, lab analyses, and co-design workshops (IGH Academy for example).

Piloting of the recyclability index tool, developed to assess textile waste materials not only in terms of their technical reusability but also their environmental and economic potential. This index will be tested and validated in operational settings to guide the allocation of waste flows into the most suitable or innovative application areas through the collaboration with designers, startups, SMEs, Brand or new value chain actors

4. Building a community that offer SMEs:

- Building strategic alliances with EU ReHubs and centres of excellence, to co-develop innovation pathways, share data, infrastructures and promote common certification, testing and recyclability standard.
- Lab-scale demo projects in cooperation with EU partners (e.g., pilot applications tested with Sweden, Spain, Portugal).
- Strengthening partnerships and widening participation across sectors and EU regions.
- Participate in international exhibitions and trade fairs, creating dedicated spaces to showcase ReHubs and SME-led innovations and circular applications.

The IGH wants to test a robust strategy to actively engage companies and other entities (ex. Public Authority) in the new extended ecosystem. This expansion is essential to reinforce the role of IGH as an open innovation and services-oriented platform.

One of the key enablers for company engagement is the hub's investment in training and skills development programmes through technical workshops, upskilling sessions and thematic seminars. The IGH wants to become the main reference for SMEs and stakeholders for spreading and transferring the practical implications of textile circularity, such as how to classify their waste families, how to assess recyclability, how to integrate circular principles into product design in line with the Ecodesign principles and how navigating regulatory challenges.

In parallel, the hub is designing open-access demo laboratories and pilot infrastructures to allow companies to test their materials, validate potential recycling paths and co-develop new applications: this allows to have an attractive entry point into the hub.

IGH organized and will organize events also in collaboration with regional industry associations for supporting the dialogue and the co-creation among textile producers, recyclers, technology providers and designers.

The IGH will design and implement dissemination activities, spreading tools and guidelines to keep interested parties informed about opportunities, pilot outcomes and service offerings related to textile waste management and the new ReHubs ecosystem. The RGT Digital Tool and other relevant EU platforms will serve as permanent access points for external stakeholders, enabling onboarding into the ReHubs ecosystem: these digital environments will also function as communication interfaces for the interaction between companies, institutions and innovation actors.

The IGH will invest in the involvement of public institutions and policy actors. Public authorities are invited to participate in working groups, policy dialogues and co-funded pilot projects. This collaboration strengthens the long-term sustainability of the hub.

Beyond public events, the IGH will coordinate and carry out a series of targeted interviews and strategic meetings with CEOs and decision-makers of companies operating along the textile value chain. These direct interactions will be designed periodically to identify specific needs, co-create pilot use cases and ensure alignment between the hub's service offering and the real innovation priorities of the market and the SMEs.

In general, the IGH will design the engagement strategy for creating a continuous integration process for guaranteeing participation.

3.2 Opportunities for collaboration with other Hubs/Regions

The IGH actively sought new collaborations, while also working on the activities described above, such as participating in international exhibitions and trade fairs, showcasing the Hub and SME-led innovations, as well as circular applications. Centres of Excellence were involved too, in order to co-develop innovation pathways, share data, infrastructures and promote common certification, testing and recyclability standards.

To make the IGH fully functional and having a concrete impact on the ecosystem, a collaborative effort with key stakeholders is essential. This involves firstly the regional and national actors, then extends it into a more EU-wide dimension. Among the actors identified, the most proficient cooperations are listed below:

- **Magnolab (Textile Innovation District):** Among the key players contributing to the Biella Textile Recycling Hub ecosystem is Magnolab a cutting-edge industrial network born in 2022 from the contribution of several leading companies in the textile value chain, of which many are members of Po.in.tex. The cooperation between Magnolab and the IGH will be crucial in the future, aiming to support the development and testing of prototypes made from recycled materials, evaluate their performance and feasibility, and enable the industrialisation of circular products. The Magnolab collaborative model encourages synergy not only among businesses but also across sectors, expanding the reach and value of the Hub's activities.
- **Sistema Poli Piemonte:** Is the regional network of 7 Innovation Clusters in Piedmont. It supports over 1,300 co-funded innovation projects in strategic areas such as ecological transition, digitalization, bioeconomy, and sustainable textile technologies. Potential synergies with the IGH include the sharing of technological choices (such as sorting, transformation, and exploring applications for secondary raw materials beyond the textile sector), participation in joint innovation projects, training activities for SMEs, expanding the IGH service offer, enlarging the network by involving companies and shared laboratories, and alignment with regional calls for proposals, especially for cross-sectoral initiatives aligned with the Smart Specialisation Strategy. There is strong strategic alignment between Sistema Poli Piemonte and IGH: both focus on circular

innovation, training, textile technologies, and technology transfer. A structured collaboration could significantly enhance the hub's impact, support the scalability of prototypes, and strengthen IGH's positioning in Piedmont and at the European level.

- **ASTRI – Italian Recycled Textile Association:** ASTRI main aim is to enhance the work that the Textile District of Prato has been doing for decades, namely producing high-quality fabrics from recycled raw materials. It therefore wants to defend the past and look confidently to the future. ASTRI was founded with the hope of being able to collaborate in a complementary manner with existing consortia and initiatives, thus making IGH the perfect opportunity for cross-fertilization and mutual synergy.
- **Corortex – Textile Reuse and Recycling Consortium:** Consortium that has its roots in Prato Textile District for its activities in textile reuse and recycling. The Consortium is comprised of a variety of well-structured companies located throughout the national territory, united by the common goal of raising the industry standard and providing structured and concrete responses to institutions. The consortium was established to contribute to achieving the goals of reuse, recycling, and recovery of all textile materials, both pre- and post-consumption, but also to rationalize, organize, guarantee, promote, raise awareness, and incentivize reuse and recycling.
- **Retex Green:** Is the association's tool for achieving a higher level of sustainability in the supply chain, providing concrete support for Italian companies that will soon have to comply with a new regulatory framework. The consortium specialises in the management of end-of-life waste from textiles, clothing, footwear, and leather goods. Our vision is to design a future in which all participants in the supply chain, both upstream and downstream, embrace circularity. As the leading consortium of manufacturers, Retex Green is driving change in the textile and fashion sector by promoting innovative sustainability solutions, creating synergies and offering diverse solutions to all stakeholders.

The valorisation of the Italian Pilots developed within the RegioGreenTex project will continue also in the future, together with the involvement of the companies from Biella and Prato districts that were interviewed during the project.

Taken together, the physical infrastructures of Prato and Biella and the IGH define a synergistic architecture. The former provides operational capacity for sorting and recycling, while the latter provides strategic services, coordination and cross-regional support. This model addresses Italy's need to shift from fragmented, district-level practices to a more structured and integrated textile circular economy. Thanks to their complementarity, these hubs will support the scalability of pilots, the standardization of certification, and the emergence of business models based on circularity. They are designed not only to process waste, but to serve as living laboratories where industrial actors can test, validate, and scale sustainable practices.

Ongoing EU initiatives further support the valorisation process, offering opportunities for both RGT and IGH to strengthen their impact through the implementation of a sustainability plan that secures long-term outcomes.

The ongoing active collaboration within [ECOSYSTEMEX](#), the European Community of Practice for a Sustainable Textile Ecosystem that brings together over 70 EU-funded projects in the field of textile sustainability and circularity, will also continue in the future. This collaboration is based on the similar goals that we share: circular textile innovation, training, standardisation, advocacy, and dissemination. Active participation in technical and policy working groups, as well as co-organisation of events and the adoption of shared tools, represent concrete pathways to strengthen the Italian hub, increase the European impact of its pilots, and expand strategic collaborations.

Besides, the connection with the [ReHubs](#) Initiative will also continue in the future, aiming to support companies in shifting the apparel and textile industry towards a circular business through the services provided by the Italian Hub to companies across the value chain, with a specific focus on SMEs.

The cooperation with [Enterprise Europe Network \(EEN\)](#) will continue too, after the 2 B2Match events held in Turin (I) on July 2024 and July 2025 (where the RegioGreenTex project was presented), aiming at a proficient exploitation of the project and its results (Hub services, SMEs Pilots' results).

3.3 Investments and cost overview

The IGH should not be perceived as physical infrastructure but as a comprehensive source of company services/support, collaborative networking areas, a catalyst for growth and competitiveness, and a platform for cross-fertilization and best practices. It offers tailored support services for companies, fosters collaborative networks, and drives business growth and competitiveness. IGH also promotes cross-sector exchange, innovation, and the dissemination of best practices within the textile industry.

A series of coordinated and complementary activities have also been carried out by the two main waste management authorities in Tuscany and Piedmont, with a focus on optimising collection and sorting systems, improving data sharing and piloting innovative waste treatment approaches, thus advancing the circular economy through more integrated cross-regional strategies.

- The Prato Textile Hub initiative is designed to transform the textile sector through a distributed model of innovation, infrastructure, and collaboration, leveraging the full potential of the circular economy to turn textile waste into valuable resources, generate new business models, and support sustainable industrial growth. At the heart of the hub is a major infrastructural investment based directly in Prato, carried out by a regional multiutility specializing in waste management. The facility, currently under development, has an official opening planned for June 2026. This infrastructure operates as part of a broader, decentralised model, integrating textile recycling within a wider network of local businesses, service providers and research institutions.

- The Recycling Hub Tessile Piemontese expects to realise a recycling hub in the Biella district and foster existing networks (such as MagnoLab), boosting the circular economy through a joint, participatory approach with relevant partners. This key initiative is aimed at improving textile waste management and strengthening the district's role in the circular textile economy. Unlike Prato, where recycling is deeply embedded in production processes, Biella is investing in new infrastructure and research to transition towards a more sustainable and circular model.

While the “Prato Textile Hub” and the “Recycling Hub Tessile Piemontese” primarily focus on physical infrastructure having their own resources and investment plan, the IGH is built on a different business model, emphasizing knowledge transfer and capacity building as core components of its service offering.

The table below is an overview of the main costs the IGH will have to deal with when fully operational, considering a timeline of minimum 3 years.

Type of Investments	Estimated value
R&D team	€ 57.600,00
Training & technology transfer specialist team	€ 28.800,00
Operational team	€ 10.800,00
Budget for a dedicated PhD	€ 90.000,00
Budget for specialists/experts	€ 60.000,00
Materials for testing and R&D activities	€ 6.000,00
Other costs	€ 50.000,00
Indirect costs	€ 10.000,00
Total	€ 313.200,00

3.4 Actions for securing funding after the project ends

Below the necessary actions are outlined to secure funding for hub ecosystem activities beyond the project's duration. Potential funding sources are identified, such as public grants, private investments, or industry partnerships.

The hub will allocate resources to identifying funding opportunities, building consortia, and supporting both the preparation and management of project proposals, with a strong emphasis on involving SMEs as co-designers and key beneficiaries. This approach will be instrumental not only for the IGH itself, but also for all partner organizations, enabling them to benefit either individually or through the development of new strategic consortia.

In principle, public grants, private investments and industry partnerships are actions to be further investigated by the IGH to secure funding for the Hub activities. One of the most important actions to fund the future IGH activities is the participation in funded projects, at regional and/or national and/or European level. A careful monitoring of the opportunities will be needed to define the most relevant projects for both companies and clusters, such as Po.in.tex and NTT.

Funding may cover, for example:

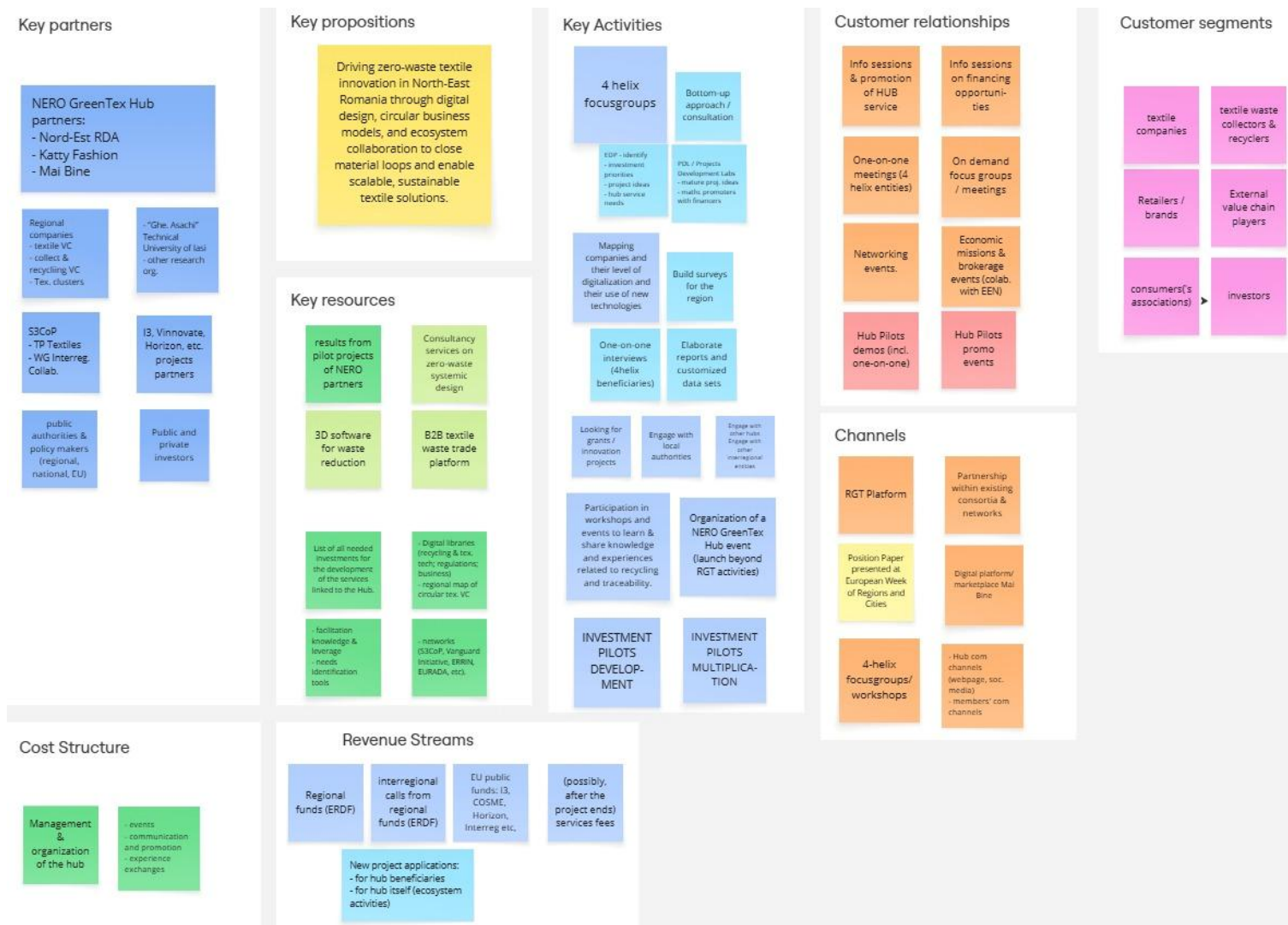
- In-depth activities aimed at more effective use of secondary raw materials, involving companies and clusters not necessarily limited to the textile sector, and identifying also key sectors and product categories where innovation should be focused
- Purchase of "post-sorting" machinery to be used by companies, with the support of the clusters.

Companies could partially fund these actions, but the need for external funding (EU projects; I3, Horizon Europe, SMP, Interreg, etc.) is essential too. The IGH is also searching for cooperation/contribution at National level, especially for the machinery, and at regional level, by using, for instance the regional R&D&I calls such SWICH (Piemonte Region), which includes dedicated funding for innovation projects for companies.

Conceived and structured within the RegioGreenTex project, the IGH operates across Tuscany and Piedmont but aims to expand to other Italian and EU regions. It focuses on transferring knowhow, supporting SMEs, consolidating testing and certification services, validating technologies and applications and aligning the Italian system with European circular economy goals.

4. NERO GREENTEX HUB: BUSINESS PLAN FOR HUB INVESTMENTS

Business Model Canvas Template



The details of this model can also be found in Annex III.

4.1 Description of activities at the hub ecosystem level

Below you will find a detailed description of the activities within the North-East Romania (NERO) Greentex Hub to validate, pilot, and demonstrate innovations at TRL 6-9. Specified how the hub engages new companies (including SMEs) and institutions that are not yet part of the project. Efforts are described how to enhance collaboration within the project/consortium.

NERO GreenTex Hub is a virtual hub focusing on support of regional stakeholders on zero-waste design and processes for pre- and post-production waste. Its primary objective is to foster a zero-waste, circular textile value chain through sustainable, innovative, and scalable solutions that have potential of multiplication. The hub acts as a catalyst for regional transformation in the textile sector by combining industrial, academic and civil society efforts.

NERO GreenTex Hub addresses the entire value chain of a sustainable and circular garment industry, beginning with sustainable product and fabrication design, followed by industrial textile waste identification and sorting, and culminating in fibre recycling or upcycling at either the local or interregional level.

The hub's ambition is to serve the entire textile sector in North-East Romania, aligning with the regional smart specialization priorities and contributing to the development of a sustainable circular economy in textiles.

Within the hub in the RGT project three interconnected investment demo-cases have been supported to pilot advanced solutions across the textile value chain:



Figure 7: NERO GreenTex Hub partners

- Developing, testing and optimizing systemic design solutions (for products and processes), for the reduction of textile waste. This demo case was led by Katty Fashion. The objective was to minimize – up to zero % textile waste at the design phase through digital pattern simulation and validate these models in real-world production environments.
- Testing and adopting to the industrial environment digital product patch, zero-waste design for clothing patterns. This demo case was led by Mai bine Association and execution took place on Katty Fashion premises. The solution is replicable to other RegioGreenTex partners.
- Developing a platform to connect the regional textile recycling ecosystem in a digital B2B marketplace focused specifically on pre-consumer, industrial, and commercial textile waste. This demo case was also led by Mai bine Association. The purpose was to build a regional digital platform that connects textile waste generators and users (e.g., factories, retailers, small workshops etc.), being sellers, buyers or both.

On top of these cases involving RGT partners the NERO GreenTex Hub is actively engaging new companies and institutions beyond the RegioGreenTex consortium through info days, workshops, EDPs (Entrepreneurial Discovery Processes), digital and physical matchmaking, promotion and market research (interviews, surveys, consultation). These combined approaches help the NERO Hub to transform from a closed consortium into an open innovation ecosystem, active beyond the end date of the RegioGreenTex project.

To foster cross-hub and intra-consortium collaboration, NERO GreenTex Hub is engaged in the following:

- Participation in interregional hub workshops, contributing to knowledge transfer and synergy development across EU textile region.
- Thematic collaboration sessions with other hubs, and integration of digital tools;
- Regular coordination meetings with project partners to align objectives, exchange data, and share best practices;
- Organization of intra- and inter-regional ecosystem events e (e.g. EDP focus-groups, thematic workshops)

In conclusion, the NERO GreenTex Hub is actively building a vibrant innovation ecosystem through pilot actions, SME engagement, and cross-regional knowledge exchange. By testing and validating TRL 6–9 innovations, the hub is not only demonstrating the technical feasibility of circular textile solutions but also integrating social and policy dimensions, ensuring long-term sustainability and regional impact.

4.2 Opportunities for collaboration with other Hubs/Regions

NERO GreenTex Hub partners have been actively looking for cross-link inside the project consortium. After a continuous mapping of collaboration opportunities within the consortium, there have been meetings with other pilot projects to discuss:

- Integration of Vividye AB's process for easier upcycling and recycling;
- Collaboration with Trafi for waste fabrics;
- Digital systemic collaborative design and integration of upcycling patterns (Katty Fashion with Mai bine);
- Possibility of integrating redesign services at the product end of life (Quest Studio);

The RegioGreenTex project set the table for interregional innovation in circular textiles, offering the companies and all other partners opportunities to collaborate across borders, share knowledge, and adopt best practices. Through its 5 GreenTex hubs, it can also promote valorisation of the pilots and nurture development of new ones.

The establishment of a Community of Circular Textile Regional Policy Makers by 2025 can be an opportunity to support design and implementation of circular textile strategies. This community

could play a crucial role in shaping and implementing regional circular textile strategies, providing a supportive policy landscape that fosters sustainable practices, investment, and industry-wide collaboration for a circular economy.

To accelerate the adoption of circular solutions, establishing a structured network among regions would be highly beneficial. The S3 Community of Practice (S3CoP) Thematic Partnership - [Smart Regional Investments in Textile Innovation](#), which the North-East Romania co-leads, has been re-scoped and restructured, a number of technical workshops being organized. The partnership aims to strengthen the regional innovation capacities, to facilitate investment in open innovation infrastructures or new technologies, and to establish effective collaboration between EU actors, so as to offset the risks and costs associated with long-distance supply chains. Setting up a dedicated policy making group will encourage joint programming for circular textiles before & beyond 2029.

To facilitate knowledge sharing and interregional cooperation, we plan to encourage valorisation of the RegioGreenTex pilots, stay connected with the GreenTex Hubs network and also promote peer-learning and exchange with Enterprise Europe Network (EEN) and European Digital Innovation Hubs (EDIH).

Connection between regions can also be improved through initiatives like [Vinnovate Call 2025](#) (for participating regions) or by taking advantage of ERRIN (European Regions Research and Innovation Network).

4.3 Investments and cost overview

Being a virtual hub providing support services and not a physical one (no infrastructure), NERO GreenTex hub activities will consist mainly of typical ecosystem activities such as thematic events and focus groups, communication and promotion, experience exchanges, one-on-one meetings (4 helix entities), etc.

The North-East Regional Development Agency, as coordinator of the hub, will continue to lead, facilitate and foster collaboration and innovation within the textile industry, map relevant companies, identify potential partners and leverage academic resources.

Continuously involving quadruple helix players will function as a supporting backbone and will benefit a better cross-fertilization.

In the short term, no additional investments are required for hub management activities.

These ecosystem activities will be integrated in the daily office activities of the NERDA personnel involved in sectorial and smart specialisation, Textiles and Circular Economy being among the priorities of RIS3 North-East. Also, the industrial partners of the hub (Katty Fashion SRL and Mai Bine Association), will be invited to contribute in specific activities, as ambassadors of interregional collaboration in the field. In the medium and long term, additional human and financial resources should be identified (project based), to keep the pace and extend these activities with new services for the regional textile ecosystem.

4.4 Actions for securing funding after the project ends

Below the necessary actions are outlined to secure funding for hub ecosystem activities beyond the project's duration. Potential funding sources are identified, such as public grants, private investments, or industry partnerships.

In order to secure funding for hub activities beyond the RegioGreenTex project that require more than human resources from NE RDA, new project applications are taken into consideration for:

- The hub itself (capacity building, ecosystem activities);
- Projects may be developed in partnership with other members of the regional ecosystem (4-helix: companies, clusters, universities and other knowledge organisations, associations) and with similar partners from EU;
- Regional promoter could be NERDA, but also any other eligible entity from the region
- Applications could be submitted to EU calls (e.g. I3 Strand 2b, Horizon Europe / WIDERA, EIE, etc.).
- Beneficiaries - i.e. companies, clusters, research organizations, other stakeholders interested in textiles circularity, promoters of projects for innovation and productive investments, for digitization, awareness, and skills formation.

Related to the last point: NE RDA is the managing authority for the North-East Regional Programme 2021-2027 (ERDF regional funds), which includes dedicated calls for innovation projects, and also for digitalization and circular economy. One such example is the *regional call for circular economy* (a first in Romania). Launched in June 2025, under the Priority 1 - *A more competitive and innovative region*, with an allocation of EUR 30 million, the call will support projects aimed at increasing the competitiveness of SMEs through the transition to new models of sustainable production and at job creation in SMEs, including through productive investments. The purpose of these investments is to increase the technological level and the organizational capacity to manage manufacturing processes, product and service development, and to increase resource efficiency in companies in priority areas identified in the North-East RIS3. The call closed on 31 July 2025, project applications being currently in the process of evaluation.

Representatives of the regional textile sector have participated in the consultations organized by NERDA in various phases of the elaboration of the call, including within the Regional Working Group for Circular Economy.

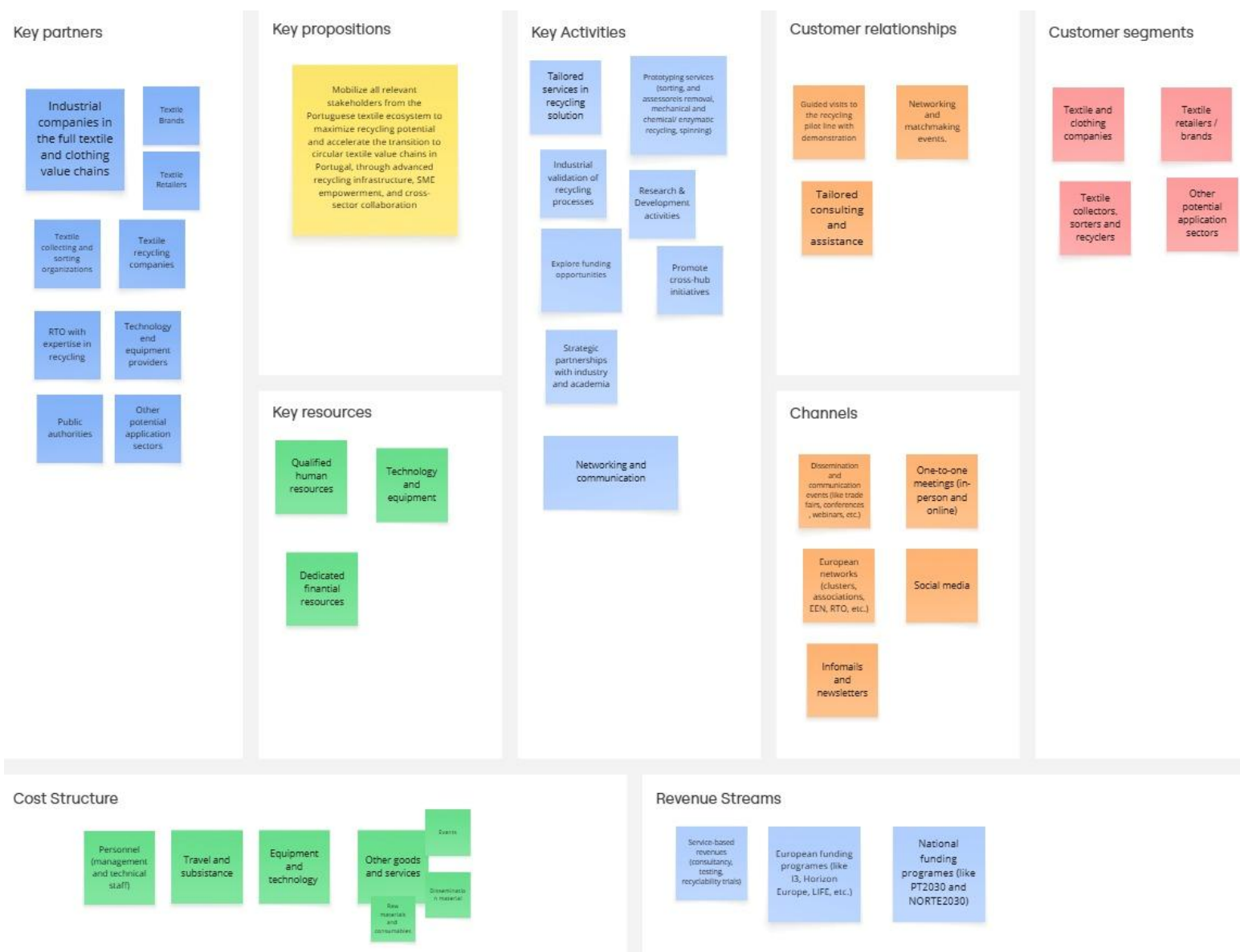
The call has been discussed with the regional stakeholders of the NERO GreenTex Hub during the RegioGreenTex EDP focus group organized in Iași (NE Romania) on 8 May 2025.

In addition to the calls elaborated within the North-East Regional Programme 2021-2027, NERDA also constantly monitors the other EU public funds that may support circular textiles (e.g.: I3, Horizon Europe, Interreg, Erasmus, etc.) and could match regional needs for investment and development. Direct communication with stakeholders, periodical Project Development Labs, focus-groups and workshops are the main tools for matching these resources to the sector's needs and supporting beneficiaries in fine tuning their project ideas.

Of equal importance is the partnering for dialogue in policy making at regional level. This is a necessary, continuous action, in order to identify the investment and development needs of the ecosystem, to translate them into regional strategies and build dedicated funding programs accordingly. In this way, we will support the identification and growth of innovative projects in circular textiles and not only.

5. PORTUGAL GREENTEX HUB: BUSINESS PLAN FOR HUB INVESTMENTS

Business Model Canvas Template



The details of this model can also be found in Annex III.

5.1 Description of activities at the hub ecosystem level

Below you will find a detailed description of the activities within the Portugal Greentex Hub to validate, pilot, and demonstrate innovations at TRL 6-9. Specified how the hub engages new companies (including SMEs) and institutions that are not yet part of the project. Efforts are described how to enhance collaboration within the project/consortium.

The Portugal GreenTex Hub (PGH) is a service organisation within CITEVE that provides recycling services and aims to mobilize all relevant stakeholders from the Portuguese textile ecosystem and support them in developing concrete innovations aimed to maximize recycling potential of textiles and accelerate the transition to circular textile value chains in Portugal and beyond.

The PGH activities include:

- Tailored services for companies interested in recycling solutions including feasibility assessments studies based on their specific requirements.
- Prototyping services to test recyclability of different types of textile materials (post-industrial and post-consumer) using the following pilot line infrastructures:
- sorting line and accessories removal, composed of a driving system with two sensors to identify colour and composition, and a robotic harm with a proprietary system for removing hard parts and accessories on the textile waste products.
- Mechanical recycling line consists of a cutting (Starcut 500 model) and a shredding (Cadette model) machines from LAROCHE.



Figure 8: Cutting and shredding machines

- Fibres spinning equipped with a spinning line, at pilot scale, from Mesdan.

- Chemical/enzymatic recycling line include a series of reactors and pre-treatment processes to enable the dissolution of the wastes cellulosic fraction into new materials.



Figure 9: Spinning line from Mesdan: carding, drawing and roving, spinning, and winding (from left to right)

- Industrial validation of recycling processes tested at pilot scale by collaboration with key industrial players, like SASIA (mechanical textile recycling) and TINTEX (sustainable dyeing and finishing processes) also partners of the RegioGreenTex project, and other industries relevant to demonstrate the viability of the process at an industrial scale;
- Research & Development activities focusing on the development of advanced sorting and recycling technologies, especially for complex or blended materials. Efforts also include eco-design strategies and digital tools to improve recyclability and traceability;
- Networking and communication activities to foster the collaboration and uncovering new business and innovation opportunities. Participation in trade fairs, industry events, matchmaking sessions, and knowledge-sharing workshops helps the hub build strategic connections and expand its reach.

All these initiatives are essential for engaging new stakeholders, thereby strengthening the ecosystem, and promoting inclusive growth.

5.2 Opportunities for collaboration with other Hubs/Regions

Collaboration with other hubs and regions is a strategic priority for the PGH, as it enables the scaling of circular textile solutions through shared knowledge, technological synergies, and joint innovation. By fostering interregional partnerships, PGH can enhance its impact, accelerate the development of sustainable practices, and contribute to unified European Union approach to textile circularity.

PGH aims to leverage shared resources and infrastructures to reduce duplication of efforts and improve the efficiency of circular systems. This collaborative model not only increases the quality and compatibility of recycled products across regions but also supports the creation of a scalable framework for textile circularity at both regional and interregional levels.

Engagements with other European initiatives are a key opportunity to amplify PGH visibility and influence in European policymaking and investment streams. Through this network, PGH can align

with broader EU strategies and access funding mechanisms that support innovation and industrial transformation.

During the RegioGreenTex project, the Circular Garment initiative was an opportunity to pilot a cross-hub initiative to demonstrate circularity in real conditions across multiple players from the RegioGreenTex regions in the circular textile value chain.

Other concrete collaboration opportunities have been already identified:

- Recyc'Elit by AURA GreenTex Hub: Brings specialized expertise in chemical recycling of synthetic fibres looking for collaboration to recover and valorise cellulosic waste streams removed from complex textile blends (waste from the company chemical recycling process);
- Lowlands GreenTex Hub: Exchange knowledge and methodology in textile waste sorting and classification;
- RiSE: Joint research and technology development on fibre recovery technologies, comparative testing of recycled materials, and development of standardized protocols for technology validation.

By these efforts to build partnerships, PGH aims to be an active element in the European circular textile ecosystem, contributing to a sustainable future for the textile industry.

5.3 Investments and cost overview

The investment in the PGH should ensure operational continuity, scalability, innovation through R&D projects and long-term sustainability, supporting its role as a key enabler of circular transformation in the textile sector. The main areas of investment include:

- Human resources: Strengthening technical and coordination teams to manage stakeholder engagement, deliver tailored and prototyping services, and stimulate R&D projects;
- Maintenance and operational costs: Ensuring the functionality of the PGH's pilot lines;
- Technology and equipment costs: Investment in new technological solutions and equipment to maintain and enhance the cutting-edge capabilities of PGH's pilot lines.
- Ecosystem engagement and collaboration costs: Develop activities such as stakeholder mapping, organization of quadruple-helix workshops organization, matchmaking activities using dedicated platforms, and other collaboration activities;
- Communication and dissemination costs: Participation in national and international events, communication materials, among others.
- The investment plan of PGH must be adjusted considering the EPR system to be implemented in Portugal, and the funding opportunities available to the textile and clothing industry.

5.4 Actions for securing funding after the project ends

Below the necessary actions are outlined to secure funding for hub ecosystem activities beyond the project's duration. Potential funding sources are identified, such as public grants, private investments, or industry partnerships.

To ensure the long-term sustainability and scaling of the PGH, an active and diversified funding strategy is planned, focused on securing public grants, building strategic private partnerships, leveraging industry collaborations, and developing service-based revenue streams. This strategy involves multiple sources of funding to avoid dependence on a single funding stream and to ensure financial resilience through the mapping and monitoring EU, national and regional calls aligned with circular economy and textile innovation (e.g., Horizon Europe, I3, Interreg, LIFE, PRR, PT2030, Norte2030, among others).

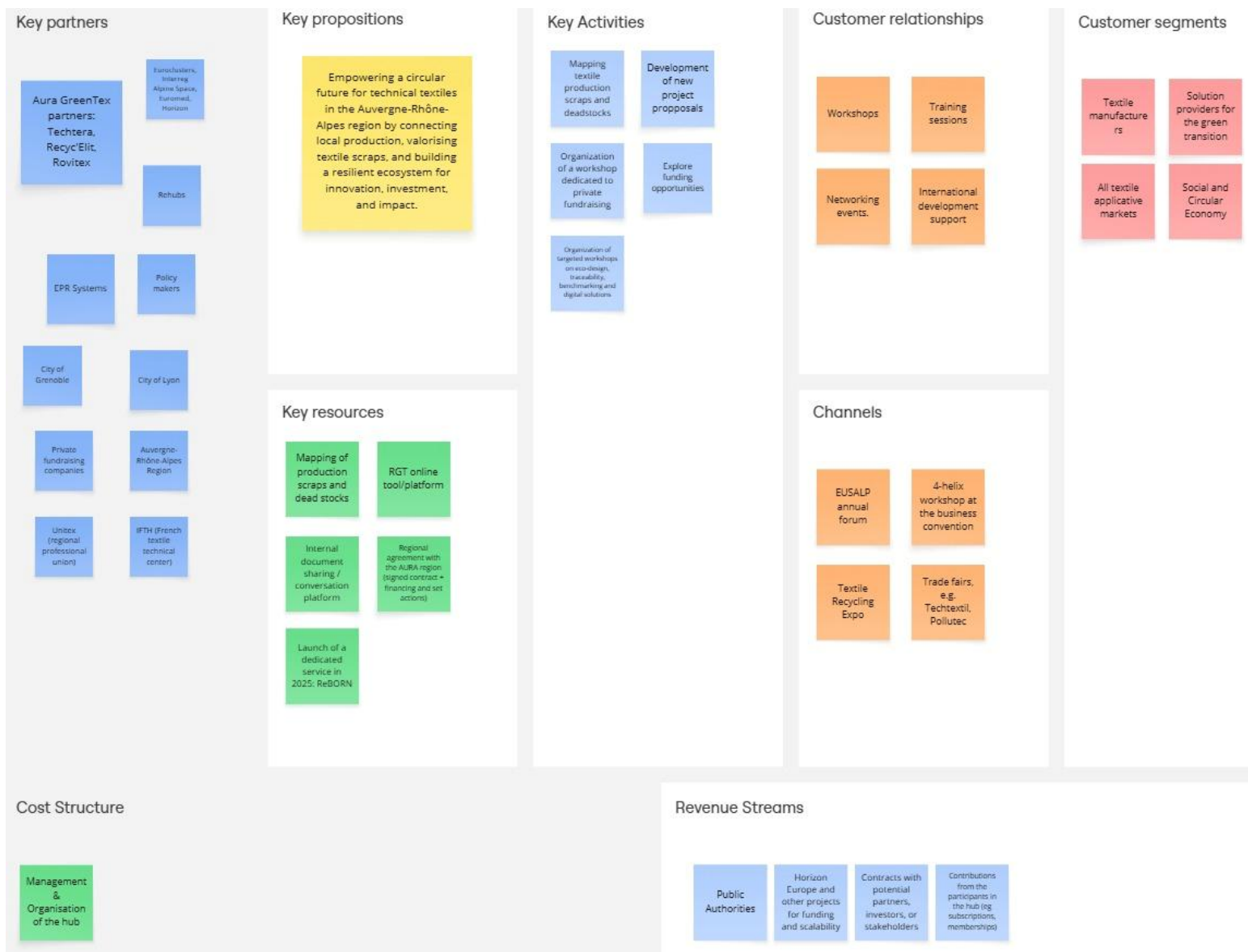
The revenues generated through PGH's tailored and prototyping services include the services provided to companies interested in recycling solutions. These services include feasibility assessments studies and recyclability testing of different types of textile materials (post-industrial and post-consumer), such as material testing (cutting, shredding, fibre characterization), pilot prototyping, custom recycling trials, circularity consultancy, training sessions and knowledge transfer.

The EU and national funding programmes are relevant to support R&D projects for the development of new textile solutions in recycling processes and to support infrastructure innovation and expansion, as well as innovation transfer. Actions to leverage this type of public funding include organisation of dedicated information sessions on funding opportunities, particularly those supporting the circular economy (e.g., European and national funding programmes, cascade funding, etc.), as well as networking and workshop activities to connect organisations interested in developing consortia for new circular textile projects.

Another potential funding source is through equity firms interested in circular and innovative textile products or technologies. To attract this type of investment, it is essential to promote targeted matchmaking and networking events that connect equity investors with companies developing promising circular textile solutions.

6. AURA GREENTEX HUB: BUSINESS PLAN FOR HUB INVESTMENTS

Business Model Canvas Template



The details of this model can also be found in Annex III.

6.1 Description of activities at the hub ecosystem level

Below you will find a detailed description of the activities within the AURA Greentex Hub to validate, pilot, and demonstrate innovations at TRL 6-9. Specified how the hub engages new companies (including SMEs) and institutions that are not yet part of the project. Efforts are described how to enhance collaboration within the project/consortium.

The AURA (Auvergne-Rhône-Alpes) GreenTex hub is a virtual hub focusing on implementing a quadruple-helix approach and collaborative support / service system that should lead to a textile industry that is based on the fundamentals of a circular economy. In its actions it therefore focuses on waste qualification, collecting and sorting systems, as well as the development and implementation of business-sustainable recycling solutions. Waste prevention is also taken into account, including eco-design.

The hub is led by Techtera, the innovation cluster dedicated to the French textile industry. Over the course of RegioGreenTex, Techtera secured cooperation schemes and financing with several public authorities, including the 2 major urban areas of the Region Auvergne-Rhône-Alpes : Métropole de Lyon et Grenoble Alpes Métropole. With these 2 public authorities, agreements have been signed to implement targeted supporting activities for the textile industry, including activities and events to connect the regional textile maker industry with organisations able to valorise waste, and the organisation of metropolitan circular circuits. They include local authorities (cities or groups of cities), and encompass private organisations active in collecting/sorting/valorising waste on the targeted territory. The regional authority Region Auvergne-Rhône-Alpes itself is also a key player. In 2024, an agreement gathering the region, Techtera, Unitex (regional professional textile union), and IFTH (national textile technical and research center) has been signed to establish the financing of several supporting activities for textile circularity at the regional level, including an extensive mapping of production scraps and dead stocks and the development of SMEs skills related to eco-design. The activities include:

- Generating collaborative research projects, starting from idea inception and consortia building: creativity sessions, funding opportunities identification, connection with financing organisations, project development and implementation support.
- Identification of key players in the region for supporting the systemic implementation of circular value chains, such as organisations for collecting and sorting waste, public authorities, networks, and technology providers with applications relative to circularity in textiles; visits and meetings are bound to be organised to connect supply and demand relative to green solutions and technologies for textile companies.
- Mapping of production waste and dead stocks in the Region, and organisation of matchmaking activities between waste producers/owners and organisations able to valorise it.

- Identification of private funding opportunities, and support of companies to access these fundings: project definition, validation of the type of funds, amount, KPIs, support in applying to private funding (process definition, project writing and budget development support)

In the last semester of 2025, Techtera - as part of the hub - will launch a new service called “ReBORN” targeting companies and research/academia organisations. It consists in a regular, periodic working group organised in-person over one day, four times a year, dedicated to textile circularity aiming at connecting complementary organisations for the joint development of and investment in circular solutions, including recycling. The service is open to organisations outside of the region as well. The service is mainly intended to support SMEs such as the regional companies involved in RegioGreenTex (Recyc’Elit, Rovitex) to facilitate access to financing and improve investment capacity. A convention is to be signed between the participants to maintain confidentiality for the information shared and discussed during the working group sessions. It provides insight for SMEs to identify partners, funding opportunities, market and technology possibilities that can lead to consortia building for proposals, but also to private partnerships as well as improved knowledge and network outreach to facilitate targeted funds mobilisation.

Finally, within the frame of the hub, Techtera established links with organisations from Social and Circular Economy, a major player of textile circularity (mainly in collecting and sorting waste) in the region. By including Social and Circular Enterprises (SCE), the hub acknowledges the diversity of needs, social, and business frameworks to transition to a circular textile industry and aims at finding ways to stimulate research and investment in SCE. SCE is an instrumental sector for waste management in the Auvergne-Rhône-Alpes Region, comprised of private companies or associations playing an essential role in the collection and sorting of waste. A collaboration has been setup with the Chambre Régionale de l’Economie Sociale et Solidaire (Regional Chamber for Social and Solidarity Economy), which federates SCE organisations in the region. This comprehensive approach addresses the technical, business, social, and policy imperatives necessary to obtain sustainable, efficient, and profitable circular models in the regional textile industry.

6.2 Opportunities for collaboration with other Hubs/Regions

A link has been established with the Italy GreenTex Hub, focusing on the topic of wool and on the development of innovative solutions for wool valorisation. Apart from wool cooperations with the clusters from the Italy hub also include cooperations regarding waste prevention and management in polymer industries, the development of a tool for decision-making in waste valorisation, and the implementation of chemical recycling solutions targeting specific materials. No formal partnership is established as the cooperation follows a project-based approach, based on mutual needs and skills.

Techtera aims at establishing connexion between the AURA GreenTex Hub and geographical areas pertinent in terms of cross-territorial cooperation, hence the ongoing joint activities with Northern Italy. The cooperation has to rely on complementarities (technologies and know-how available, best practices put into place, territorial stakes, skills) between the involved regions, and be in line with the S3 of the Auvergne-Rhône-Alpes Region. Interregional and cross-border cooperation is an essential aspect in the development of joint technical, business, and policy solutions, so the hub is open to collaborations with other regions to seek complementarity, and coherence in the establishment of circular value chains.

6.3 Investments and cost overview

No investment in infrastructures is foreseen at the moment since the Hubs focusses on service to support SMEs in the transition towards a circular textile system. Therefore, costs will essentially be for staffing and basic office appliances.

Costs list	Type	Leader	Individual or shared ?	Notes/risks	Amount
Staff costs	fixed, recurring	Techtera	Individual	No 100% dedicated revenue structure	50.000€ to 70.000€
External experts	fixed, recurring	Techtera	Individual	No 100% dedicated revenue structure	Unknown, opportunity-based
Travel costs	recurring	Techtera	Individual		est. 10.000€ per year
External costs for workshops, events (e.g. catering)	fixed, recurring	Techtera	Shared		500€ per participant

Revenue source	Payer	Beneficiary	Frequency	Link to activities?	feasibility/5
Public funding	Région AURA, Métropole de Lyon	Techtera	yearly / every 2 years	Implementation of a roadmap (accord de filière) and short-term mission-based partnerships	4
Membership	Individual organisation (SMEs, research centers)	Techtera	yearly	Access to services	5
Additional service fees	Individual organisation (SMEs, research centers)	Techtera	yearly	Funding external costs (e.g. catering...)	5
Public funding	Région AURA	Techtera	yearly	Consortia building, R&D projects setup	4
Private funding	Individual organisation (SMEs, research centers)	Techtera	NA	Implementation of services (communication, technical support, market analysis...) that are not collective	4

6.4 Actions for securing funding after the project ends

Below the necessary actions are outlined to secure funding for hub ecosystem activities beyond the project's duration. Potential funding sources are identified, such as public grants, private investments, or industry partnerships.

For most activities within the hub, funding has been secured with the involved regional authorities, with the agreement on objectives and calendar for activities implementation. This will last until the end of 2026. On the long term, new iterations of these agreements will be sought, adapted to the achievements of the previous ones, and to the evolving priorities regarding recycling and textile circularity.

As regards the “ReBORN” service, staffing costs will be supported by Techtera as part of the activities of the cluster that are offered to the members. An additional fee, with a low amount, will be incurred to the beneficiaries of the service to cover external costs such as catering, group travelling, visits, or expert interventions. The implementation of activities generated by the hub’s actions by private stakeholders such as SMEs and SCE companies, such as investments and research activities, will benefit from funding by answering calls for projects or tenders, that can be from public or private organisations. This includes programmes such as France 2030, ADEME financing (French level), or EIC Accelerator and cascade funding through EuroClusters (European level).

The link with private funding will also be strengthened: the hub will build on a workshop dedicated to private funding organised in 2024, to support companies in accessing private investment sources, such as equity funds.

7. AN EU WIDE NETWORK OF REGIONAL GREENTEX HUBS

The preceding sections have detailed the individual investment strategies for each RGT hub, focusing on their activities, resources, and potential funding. However all together, these hubs form a diverse and powerful network of regional ecosystems that are a driving force for circular textile innovation for the EU. And because of effective collaboration the potential of these GreenTex hubs goes beyond the sum of its individual parts. In this chapter, we step back to have a better look at this bigger picture, outlining the collective strategic value of this network of GreenTex hubs, presenting a blueprint for future collaborations, and identifying how this network can remain sustainable, relevant, and impactful long after the project ends. Hereby this chapter also provides the strategic justification for maintaining and expanding the RegioGreenTex hub network beyond the project's lifetime.

7.1 Conclusions

Added value of hub services and the hub network

The RegioGreenTex hubs have demonstrated that individual SME support, regional clustering, and specialization generate significant value for companies and accelerate the transition towards sustainable textile innovation. Their impact increases when structured interregional collaboration is added, enabling the transformation of individual regional strengths, ranging from cotton and wool recycling to chemical processes, zero-waste design, and digital tools, into a European driver of circular innovation.

Catalysts for interregional innovation and investment

Through joint pilots, shared infrastructure, and coordinated funding strategies, the hubs have validated and scaled innovations at TRL 6–9. They have built cross-regional value chains, mobilized investments, and ensured SMEs gain access to resources, expertise, and markets that would otherwise remain fragmented. As such, they are accelerators for innovation and replicable models for other European regions.

Sustainable hubs require diversified funding

Long-term resilience depends on a diversified funding mix: regional and national authorities, EU programmes (I3, Horizon Europe, Interreg, LIFE), Extended Producer Responsibility contributions, industry co-investment, and service-based revenue streams. Embedding hubs into broader European thematic networks further expands access to funding and strengthens Europe's leadership in textile sustainability.

Supporting EU green growth and resilience

The hubs directly contribute to Europe's strategic goals for green growth, industrial resilience, and strategic autonomy as laid out in the EU Strategy for Sustainable and Circular Textiles (2022) and subsequent competitiveness reports. They reduce dependency on external markets, strengthen local economies, and create opportunities for SMEs in a future-proof circular industry.

A blueprint for replication in other regions

The RegioGreenTex model offers a tested blueprint that is already being adopted in regions such as Västra Götaland (Sweden), Valencia and Catalonia (Spain). Other regions in Germany, Poland, the Czech Republic, Finland, and Greece also have the potential to evolve into fully operational hubs, given their industrial capacity and policy support.

Building blocks for a European network

The groundwork has been laid for an EU-wide network of interconnected hubs. Recognizing and linking emerging ecosystems will accelerate knowledge transfer, create complementary specializations, and strengthen Europe's capacity to build robust cross-border value chains. This ensures the sustainability of existing hubs while enabling scaling at the European level.

7.2 Discussion: Toward a sustainable and expanding network**Complementarity and unique strengths**

Each hub is rooted in its regional SME ecosystem and industry strengths, supported by semi-public, public, or academic organisations. Their uniqueness is expressed not only in fibre specialization (cotton in Portugal, wool in Italy, high-end fabrics in Aura) but also in systems and expertise (mature collection and chemical recycling in the Lowlands, digital zero-waste design in NERO). Connecting these unique strengths unlocks opportunities to:

- Build EU value chains for specific markets and textile streams,
- Provide SMEs direct access to expertise and infrastructure across borders,
- Share knowledge on funding and markets,
- Develop interregional R&D projects that would be impossible at regional scale.

Aligning interests and uniting forces

Collaboration between hubs also creates synergies where interests overlap. Examples include the Circular Garment initiative, combining expertise from multiple hubs to tackle design for disassembly and sustainable production, and the shared facility list, enabling SMEs to upscale processes. Cross-hub studies, such as on chemical recycling, further illustrate the added value of joint knowledge development.

Blueprint for replication and scaling

The RegioGreenTex structure has created a replicable model, defined by five core functionalities:

1. Building circular value chains,
2. Attracting investments (public, private, and consortia),
3. Connecting finance and EPR systems,
4. Capacity building and knowledge transfer,
5. Community building for SME visibility and policy engagement.

Its building blocks include governance models linking SMEs, academia, and public/private partners; funding mixes combining subsidies and revenues; regional specialization profiles; and interregional collaboration frameworks. Together, these elements align closely with EU priorities for scalability and transferability.

Future directions and recommendations

To secure long-term impact, several priorities emerge:

1. Support existing and emerging hubs ensuring that regional ecosystems with proven potential can formalize and expand.
2. Strengthen the EU-wide network by embedding hubs into European thematic partnerships, such as the S3 Community of Practice on Smart Regional Investments in Textile Innovation.
3. Broaden the thematic scope integrating related domains such as digitalisation (AI and blockchain for sorting and traceability), automation, chemical recycling, bio-based materials, and logistics innovation.

By following these directions, the network of RegioGreenTex hubs can remain a permanent platform for collaboration and a cornerstone of Europe's sustainable textile industry.

ANNEX I: DELIVERABLE 5.1

Deliverable 5.1 Regional hub ecosystem inception plan

Link to report: [Deliverable-D5.1-20230726-1.pdf](#)

D5.1 Regional hub ecosystem inception plan

EXECUTIVE SUMMARY

The primary purpose of this paper is to provide more detailed information on the workplan of work package 5 (WP5): Regional hub ecosystems. The target audience are the RegioGreenTex (RGT) partners and the representatives of the EU I3 programme. Additionally, it aims to inform potential stakeholders within the different hub ecosystems about strategy, roadmap and related initiatives. Moreover, this paper serves as an initial invitation to stakeholders such as companies, researchers, non-governmental organizations (NGO's) and policymakers to join and contribute to the development of these ecosystems. As such it also intends to directly support the investment plans of the small and medium sized (SME) companies within the RGT project.

Within RGT, 5 textile recycling hub ecosystems are identified that have to support the SME's upscaling, attracting investments and creating closed loop systems. The overarching idea for the five hubs is to collaborate in constructing a comprehensive European textile recycling system. Each hub will develop its own distinct type of textile recycling hub ecosystem, which can be replicated in other regions. Additionally, each hub will possess unique smart specialization features that can be leveraged to support other regions.

WP5 of RGT is specifically focussing on this supporting role of the hubs and as such WP5 has the following three main tasks:

Task 5.1 Definition of a road map and terms of reference.

Task 5.2 Definition and execution of pilot activities, widening involvement to key players.

Task 5.3 Drafting and validation of an investment plan; including peer review and pitching.

This deliverable 5.1 (D5.1) presents a detailed outline and plan for this work package and as such is additional to the description already provided in RGT project description. This document consist of inception plans for each of these 5 regional hub ecosystems as well as a description of foreseen collaboration activities between the hubs and outside the hubs. Each hub inception plan includes a hub scope, a strategy based on specific objectives and value chain cases that support the hubs SME's and a roadmap of activities and planning that ultimately has to result in a set of SME investment plans and a hub strategy plan.

Within work package 5, a specific objective is to foster integration and cooperation between the hubs as well as with regions beyond the hubs. The primary focus is on facilitating the sharing of knowledge concerning recycling processes and supporting the necessary investments in infrastructure to establish closed-loop systems, such as sorting and separation facilities. The figure on the right illustrates which partners are active in the five regional hub ecosystems.

This project has received funding from the European Union's Interregional Innovation Investments Instrument (I3) under the Grant Agreement No. 101083731.



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D5.1 Regional hub ecosystem inception plan

The 5 hub ecosystems are also supported by the regions Valencia, Catalonia and Västra Götaland. These 3 regions will share their knowledge/facilities on textile recycling and can take learning from the 5 hub ecosystems.

Within each hub both the specialization of each hub and the value chain cases play a crucial role in supporting SME investment plans within the hub. For each of the 5 hubs these are outlined below:

1. Lowlands (Eastern-Netherlands, Flanders and Hauts-de-France); Focus on recycling of mixed textile waste.

Case 1: Build a circular loop in the Lowlands, focused on flame retardant, para-aramid textiles & colored workwear fractions.

Case 2: Create circular flow charts for the different specific waste streams at collectors and sorting companies with correlated business models and value chain, to maximize the useful lifespan of textiles and textile materials at the highest value possible.

Case 3: Post-consumer / post-production cotton and PET/Cotton blends. The focus of this regional case is on feedstock management and control, with the specific focus on assessment of the composition of the textile including finishing agents, options for a (semi-) automated or partially robotized system.



Figure 1: RegioGreenTex Regional Hubs

2. North of Portugal; Focus on recycling of textiles with high percentage of cotton.

Case 1: Creating a Special Interest Centre and consult stakeholders in the value chain interested in recycling services (research, development, and industrialization of recycled products).

Case 2: Value chain project; make recycled fiber into raw material for yarn. These fibers will be spun into yarns by local industrial spinning mills in order to understand if the fibers are suitable for an industrial level application. After that, production of textile structures will start based on the recycled yarns. To these, sustainable dyeing and finishing treatments will be applied to demonstrate the feasibility of the industrial processes.

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D5.1 Regional hub ecosystem inception plan

3. Italy (Tuscany and Piedmont); Focus on recycling of textiles with high percentage of wool.

Case 1: Tuscan case study: Analyzing waste materials and recycling technologies, best practices in textile recycling, and technologies under development, to complement the hub physical infrastructure that the local authorities will set up in Prato area, in order to maximize the recycling impact for local SMEs.

Case 2: Piedmont case study: Mapping materials and technologies, and the technical process definition. Focus on both machine adjustments and/or modifications, and mainly transferring knowhow with trials and development. Main objective is to obtain longer wool fibers from shredding processes in order to be able to use them in worsted spinning facilities, the knowhow will also be used to develop textile waste products for non-textile applications for empowering the use of recycled materials.

4. South of France (Auvergne-Rhône-Alpes); Focus on recycling of technical textiles.

Case 1: Implement a chemical recycling demonstrator for the transformation of complex PET waste into a polymer yarn that could be used for various textile applications. The hub will support in finding funding opportunities, and in building up a sustainable ecosystem for the upcoming upscaling of their technology (market studies, business plan development, testing...).

Case 2: Build a facility dedicated to textile sorting, for the management of cardboard, plastics and textile waste. The hub supports the SME looking for funding opportunities and for support to build the facility and evaluate its economic potential.

5. North-East Romania; Focus on design (prevention of waste and design for recycling).

Case 1: Testing and optimization of systemic design solutions (for products and processes), for the reduction of / up to zero textile waste.

Case 2: Zero-waste design for clothing patterns. Develop a regional platform to connect the regional textile recycling ecosystem that will later become a digital B2B marketplace for waste recycling (pre-consumer / industrial and commercial waste). Virtual traceability of fabrics.

This project has received funding from the European Union's Interregional Innovation Investments Instrument (I3) under the Grant Agreement No. 101083731.



ANNEX II: DELIVERABLE 5.2

Deliverable 5.2: Pilot actions on regional hub ecosystem level

Link to full report: [Deliverable-5.2-29032024-delivered.pdf](#)



D5.2: Regional Hub Ecosystem
Actions

EXECUTIVE SUMMARY

The RegioGreenTex I3 project drives circularity in the textile industry through recycling hubs, forming organized ecosystems connecting triple helix partners to ensure cross fertilization to strengthen the value chain dimension. Aimed at supporting SMEs, attracting and de-risking investments, and enhancing circular textile loops, the collective efforts of these hubs strive for a comprehensive European textile recycling system.

Lowlands	Greentex	Hub	(LGH)
LGH spans Flanders, Hauts-de-France, and East-Netherlands. Operating through four key functionalities, LGH focuses on three regional textile value chains. Actions include partner visits and challenge-based workshops, demonstrating commitment to collaboration, investment, and supporting regional textile reuse.			
Italy	Greentex	Hub	(IGH)
IGH in Tuscany and Piedmont enhances textile recovery and recycling. Actions involve defining services, building on the waste materials mapping carried out in WP1, promoting circular design, and fostering replication. IGH aims to create a distributed recycling hub through detailed mapping, technology identification, and encouraging replication.			
AURA	Greentex	Hub	(AGH)
AGH advances circular textile practices in Auvergne-Rhône-Alpes. Actions include local collaborations, workshops, and securing public/private funding. Notable projects involve wastewater management, mapping scraps, and supporting PET recycling demonstrators.			
NERO	Greentex	Hub	(NERO GH)
NERO GH targets a zero-waste circular textile value chain in North-East Romania. Core partners involved lead demo-cases and ecosystem actions, emphasizing collaboration, innovation, and attracting investments. Most successful actions of this hub are on cross-fertilisation.			
Portugal	Greentex	Hub	(PGH)
PGH in Norte region engages stakeholders and supports concrete recycling actions. Led by CITEVE			

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D5.2: Regional Hub Ecosystem

Actions

(P3), PGH focuses on a Special Interest Centre (SIC) for recycling-related topics and pilot-scale activities in cutting, shredding, and spinning recycled fibres.

Crucial for advancing circularity, cross-regional collaboration involves mechanisms like targeted workshops and open access hub meetings. Initiatives like the "Filling the Gaps" workshop during the regional cluster workshop held in Prato in 2023 (WP7) mark strides in strengthening the circular textile value chain dimension by investigating the needs of the SMEs represented by their regional clusters.

From cross-regional and inter-hub collaboration, key insights include identifying regions with complementary infrastructure, recognizing barriers, defining sorting and processing criteria, and highlighting the critical role of knowledge transfer and technology. Leveraging these findings optimizes efficiency and accelerates progress towards circularity.

Initiating hub and value chain development at the regional level is crucial, with lessons learned serving as valuable foundations for broader interhub and interregional collaboration. The journey emphasizes that sustainable solutions thrive when rooted in collaborative, localized initiatives that seamlessly expand for broader impact.

The RGT Hubs' prime functions and ongoing actions reveals a focus on creating circular textile value chains, attracting and de-risking investments, offering SMEs access to infrastructure, and fostering a community of cross-fertilization for SMEs.

The recommendation is for all hubs to continue and learn from successful actions, especially focusing on functionalities not yet implemented. Special attention is advised for actions related to attracting individual (SME) investments and enhancing competences in management and operations. Additionally, regions not part of an RGT Hub are encouraged to explore starting a hub and align functionalities with their needs, considering the potential effectiveness of building a hub around a single region.



ANNEX III: BUSINESS MODEL CANVAS

Lowlands GreenTex Hub Business Model Canvas							
Key Activities							
Assist SMEs in networking with bigger partners.							
Develop business cases for each value chain.							
Training sessions on pitching.							
Complete the 3 value chain projects by filling value chain gaps with new partners.							
Assist SMEs in certification processes/possibilities,							
Training sessions on circular business models							
Explore funding opportunities							
Key partners							
East Netherlands: Oost NL, Regionaal Textielsorteercentrum Twente, SaXcell, Wageningen University & Research							
Flanders: Ariadne, Centexbel, Ecoso, Ovam, Quest							
Rehubs							
Hauts-de-France: Peignage Dumortier, Euramaterials, UTT Yarns							
EPR Organisations: ReFashion, Modint,							
Invest NL							
VP Capital							
Angel Investor Network							
Angel Investor Network							
EEN							
Start-ups							
Customer segments							
External value chain players							
Retailers / brands							
Customer relationships							
Ongoing meetups to update stakeholders on progress and ensure engagement							
Final Lowlands event to showcase value chains, attract partners, and potential investors.							
Networking events.							
Key propositions							
Connect with external partners to fill missing links in the circular textile chain (e.g. sorting, recycling, production).							
Gain access to the latest technologies and best practices through a strong regional network.							
A shared platform to explore new markets and develop joint business opportunities.							

The Lowlands Hub connects companies, knowledge institutes, and other stakeholders from Eastern Netherlands, Flanders, and Northern France to build a resilient, cross-border value chain for circular textiles. We offer access to knowledge, technology, collaboration, and markets — enabling faster innovation, better use of textile waste streams, and real scaling of circular business models.

Key resources							
Machinery list from research institutes							
RGT online tool/platform							
Fieldlab							
Waste solution finder / Waste Wizzard							
Channels							
Present at the Circular Tetile Days							
Pitching sessions at the next Lowlands meet-up							
Textile Recycling Expo							
RGT Platform							
Change Now							
Revenue Streams							
Contracts with potential partners, investors, or stakeholders							
EPR Organisations							
Regional Authorities							
Membership funding from Lowlands Partners							
I3 and other projects for funding and scalability							
Cost Structure							
Management & Organisation of the hub							

Aura GreenTex Hub Business Model Canvas							
Key Activities							
Development of new project proposals							
Mapping textile production scraps and deadstocks							
Organization of a workshop dedicated to private fundraising							
Explore funding opportunities							
Organization of targeted workshops on eco-design, traceability,							
benchmarking and digital solutions							
Customer segments							
Solution providers for the green transition							
Textile manufacturers							
All textile applicative markets							
Social and Circular Economy							
Territories, public authorities							
Customer relationships							
Workshops							
Training sessions							
Networking events.							
International development support							
Key propositions							
Empowering a circular future for technical textiles in the Auvergne-Rhône-Alpes region							
by connecting local production,							
valorising textile scraps, and building an ecosystem for innovation, investment, and impact.							

Key resources								
Mapping of production scraps and dead stocks								
RGT online tool/platform								
Internal document sharing / conversation platform								
Regional agreement with the AURA region (signed contract + financing and set actions)								
Launch of a dedicated service in 2025: ReBORN								
Launch of activities for private funding (2027)								
Channels								
Networks and cross-border organisations, e.g. EUSALP								
Business conventions								
Trade fairs, e.g. Techtextil, Pollutec								
Revenue Streams								
Public Authorities (subsidies and project-based contracts)								
Horizon Europe and other projects for funding and scalability								
Contracts with potential partners, investors, or stakeholders								
Contributions from the participants in the hub (eg subscriptions, memberships)								
Key partners								
Euroclusters, Interreg Alpine Space, Euromed, Horizon								
Aura GreenTex partners: Techtera, Recyc'Elit, Rovitex								
Rehubs								
EPR Systems								
Private fundraising companies								
Policy makers								
City of Grenoble								
City of Lyon								
Auvergne-Rhône-Alpes Region								

IFTH (French textile technical center)							
Pôle Eco-Conception (ecodesign)							
Unitex (regional professional union)							
Cost Structure							
Events							
Travel and subsistence							
Other goods and services							
Staff(management and technical staff)							
Catering, rooms booking							

Portugal GreenTex Hub Business Model Canvas									
Key Activities									
Prototyping services (sorting, and assessoreis removal,									
mechanical and chemical/ enzymatic recycling, spinning)									
Tailored services in recycling solution									
Industrial validation of recycling processes									
Research & Development activities									
Explore funding opportunities									
Promote cross-hub initiatives									
Strategic partnerships with industry and academia									
Networking and communication									
Customer segments									
Textile and clothing companies									
Textile retailers / brands									
Other potential application sectors									
Textile collectors, sorters and recyclers									
Customer relationships									
Guided visits to the recycling pilot line with demonstration									
Networking and matchmaking events.									
Tailored consulting and assistance									
Key propositions									
Mobilize all relevant stakeholders from the Portuguese textile ecosystem									
to maximize recycling potential and accelerate the transition to circular textile value chains in Portugal,									
through advanced recycling infrastructure, SME empowerment, and cross-sector collaboration									
Key resources									
Qualified human resources									
Technology and equipment									

Dedicated financial resources								
Channels								
Dissemination and communication events (like trade fairs, conferences, webinars, etc.)								
One-to-one meetings (in-person and online)								
European networks (clusters, associations, EEN, RTO, etc.)								
Social media								
Infomails and newsletters								
Revenue Streams								
European funding programmes (like I3, Horizon Europe, LIFE, etc.)								
National funding programmes (like PT2030 and NORTE2030)								
Service-based revenues (consultancy, testing, recyclability trials)								
Key partners								
Industrial companies in the full textile and clothing value chains								
Textile Brands								
Textile Retailers								
Textile collecting and sorting organizations								
Textile recycling companies								
RTO with expertise in recycling								
Technology end equipment providers								
Public authorities								
Other potential application sectors								
Cost Structure								
Events								
Travel and subsistence								
Equipment and technology								
Other goods and services								
Personnel (management and technical staff)								
Dissemination material								
Raw materials and consumables								

NERO GreenTex Hub Business Model Canvas							
Key Activities							
4 helix focusgroups							
Bottom-up approach / consultation							
PDL / Projects Development Labs - mature proj. ideas - mathe promoters with financiers							
EDP - identify - investment priorities - project ideas - hub service needs							
Mapping companies and their level of digitalization and their use of new technologies							
Build surveys for the region							
Elaborate reports and customized data sets							
One-on-one interviews (4helix beneficiaries)							
Looking for grants / innovation projects							
Engage with local authorities							
Engage with other hubs Engage with other interregional entities							
Participation in workshops and events to learn & share knowledge and experiences related to							
recycling and traceability.							
Organization of a NERO GreenTex Hub event (launch beyond RGT activities)							
INVESTMENT PILOTS DEVELOPMENT							
INVESTMENT PILOTS MULTIPLICATION							
Key partners							
NERO GreenTex Hub partners: - Nord-Est RDA - Katty Fashion - Mai Bine							
'- "Ghe. Asachi" Technical University of Iasi - other research org.'							
Regional companies - textile VC - collect & recycling VC - Tex. clusters							
S3CoP - TP Textiles - WG Interreg. Collab.							
I3, Vinnovate, Horizon, etc. projects partners							
Public and private investors							
public authorities & policy makers (regional, national, EU)							
Customer relationships							
Info sessions & promotion of HUB service							
Info sessions on financing opportunities							
One-on-one meetings (4 helix entities)							
On demand focus groups / meetings							
Networking events.							
Economic missions & brokerage events (colab. with EEN)							

Hub Pilots promo events							
Hub Pilots demos (incl. one-on-one)							
Key propositions							
Driving zero-waste textile innovation in North-East Romania through digital design,							
circular business models, and ecosystem collaboration to close material loops and enable scalable,							
sustainable textile solutions.							
Key resources							
results from pilot projects of NERO partners							
Consultancy services on zero-waste systemic design							
3D software for waste reduction							
B2B textile waste trade platform							
List of all needed investments for the development of the services linked to the Hub.							
'- Digital libraries (recycling & tex. tech; regulations; business) - regional map of circular tex. VC '							
'- facilitation knowledge & leverage - needs identification tools'							
'- networks (S3CoP, Vanguard Initiative, ERRIN, EURADA, etc).'							
Channels							
RGT Platform							
Partnership within existing consortia & networks							
Position Paper presented at European Week of Regions and Cities							
Digital platform/ marketplace Mai Bine							
4-helix focusgroups/ workshops							
'- Hub com channels (webpage, soc. media) - members' com channels'							
Customer segments							
textile companies							
textile waste collectors & recyclers							
Retailers / brands							
External value chain players							

consumers('s associations)							
investors							
Revenue Streams							
Cost Structure							
Regional funds (ERDF)							
interregional calls from regional funds (ERDF)							
EU public funds: I3, COSME, Horizon, Interreg etc,							
(possibly, after the project ends) services fees							
Management & organization of the hub							
'- events - communication and promotion - experience exchanges'							
New project applications: - for hub beneficiaries - for hub itself (ecosystem activities)							

Italy GreenTex Hub Business Model Canvas							
Key Activities							
Mapping textile waste streams in Tuscany and Piedmont							
Engage with key local stakeholders (industry - academia - public actors)							
Organization of dedicated workshops for project partners and capacity building sessions							
Technical support in designing and implementation of 'textile waste treatment and recycling plants'							
beyond the IGH regions							
Training sessions for new competences							
Tecnology Scouting Report at EU Level							
Customer segments							
External value chain players							
Retailers / brands							
Sorters/Reusers/Recyclers							
All Value chain actors							
Customer relationships							
Personalized Consulting Relationships with companies or other subjects that wants to integrate recycling into their operations and business							
Business cases replication (Trafì, Marini, Casalegno etc)							
B2B Sales and Relationship Management with Buying Companies							
Networking events.							
Operational Partnerships with Collection Consortia							
Co-creation projects with clients							
Key propositions							
Building a competitive market for high-quality recycled wool through an integrated, innovation-driven circular textile hub that transforms textile waste into valuable applications, supports SMEs, and accelerates sustainable industrial transformation in Italy and beyond.							
Additional to the know-how of recycling wool, selection and processing of textile waste (both post-industrial and ppost-consumer)							
Transfer of know-how, capacity building for circular skills in textile companies							

Key resources							
Machinery list from research institutes							
List of all needed investments for the development of the services linked to the Hub.							
Scouting of novel recycling technologies							
Pilot projects from IGH partners							
Innovative recyclability index (IoR) for the textile waste material							
Training and development programmes							
Eco-design guidelines and principles							
Suggestions for innovative applications							
Channels							
Partnership with existing consortia							
RGT Digital Tool and other EU platform							
International Exhibition to showcase (Ecomondo; Textile Recycling Expo; ITMA)							
Planned interviews and meetings with CEOs of relevant companies involved in the Value chain							
Torino Fashion Week, Filow Trade Show, Speed Innovation Day, Ecosystex, Circular textile days, ETP Conference; ECCP Conference, Clusters Meet Regions							
SME's social media							
Key partners							
Piedmont: Casalegno Tendaggi, DBT Fibre, Officina39, CS Pointex, Citta Studi Biella							
Tuscany: Next Technology, ALIA, Marini Industrie, Trafi							
Rehubs							
Consortia partners (e.g. ASTRI)							
Public and private investors (Prato Municipality, Chamber of Commerce)							
Academia and Students							
Business Angel Network							
Industry professionals							
Incubators - Investors							
Contracts with experts for training and workshops implementation							
Revenue Streams							
Cost Structure							
Creation of a large infrastructure in Prato dedicated to sorting							
Regional/Local Authorities							
Management & Organisation of the hub							
Equipment for post-sorting recycling							
Contracts with Companies already engaged or interested to collaborate for a new business market							

D 5.3 Regional Hubs Ecosystems Investment Strategy

I3 and other projects for funding and scalability					
Contracts with potential partners, investors, or stakeholders					
Sales to recyclers, shredders etc.					
Demo-scale equipment					
Clean processing (i.e. Plasma for finishing)					