

After LIFE+ Communication Plan

Project acronym:	ECOTEXNANO
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1. Project background

The overall aim of the ECOTEXNANO project is to improve the environmental performance of best innovative solutions that are emerging with regards to technical textiles that incorporate nanoparticles in the textile finishing industry. Environmental, health and safety impacts will be assessed in its manufacturing operations, encouraging the integration of green technologies.

Nano-materials are not intrinsically hazardous; however, there may be a need to take into account specific considerations in their risk assessment. In order to address this major concern and considering the priority areas of life+, the key aims of this project are to:

- Provide the textile finishing industry with a user-friendly tool to improve the knowledge on risk assessment of nano-materials and to promote the safe use along their life cycle.
- Identify and reduce the environmental, health and safety impacts. Carrying out a comprehensive Life Cycle Assessment and Risk Assessment of the selected nano-materials. This analysis will allow quantifying the environmental impacts of the use of nano-materials in substitution of bulk substances, and to guarantee that these nano-materials do not pose a risk on health and environment.
- Demonstration of two pilot-scale trials in order to provide evidence of best practice in the application of nano-based techniques compared to conventional finishing chemicals.
- Increase professional's knowledge base concerning nano-materials for further development of human health and environmental EU policy such as REACH, BREF for textile sector, regulations of biocidal products and CLP regulation.
- Improve cost competitiveness of the EU textile sector, obtaining higher value products, far from low cost textiles that come from outside the EU.
- Exchange data and disseminate project results for potential stakeholders such as competent authorities (i.e. ECHA, OECD, etc)
- Increase consumer's awareness on the HSE impacts of the textile sector using nano-materials

2. Partners



LEITAT is a private non-profit Technological Centre specialized in production technologies, and develops R&D activities in the areas of materials sciences (including nanotechnology), environment, surface treatments, biotechnologies and renewable energies. LEITAT aims to offer services to the companies of the industrial sector by adding value both to products and processes.

LEITAT performs projects and managing initiatives, which promote sustainable technological development, environmental impact analysis and protection plans by the responsible use of technology. The centre has a strong competence in the field of nanomaterials, nano-toxicology, fate and bioaccumulation, as well as in REACH compliance and Life Cycle Assessment (LCA) of nanomaterials.

Concerning the first field, LEITAT develops new nanocomposites, produces nanoparticles and modifies them chemically for nano-additivation, functionalization of textiles and development of multifunctional and smart materials; the company deals also with ageing/weathering studies and monitoring of physico-chemical properties of nanomaterials during its life cycle.

LEITAT applies the methodology of Life Cycle Assessment (LCA) as a key tool to assess the potential environmental impacts and benefits of products, services and technologies developed. LEITAT carries out LCA studies according to ISOs 14040 and 14044 and the recommendations of the ILCD Handbook of the European Platform on LCA. LEITAT has applied this methodology in a high number of EU projects to assess the environmental impacts of products and services of different sectors as well as products based on nanotechnology and nanomaterials.

LEITAT has experience in Human & Environmental Risk assessment, using the main standardized methodologies and tools such as ECETOC-TRA, EUSES, ART tool or Stoffen Manager. LEITAT applies these methodologies in EU projects focusing on the risk assessment of different processes and products.



Centexbel is the scientific and technical research centre for the Belgian Textile industry, located in the heart of the Belgian textile industry with strong links to the majority of the more than 700

textile companies. Centexbel offers a complete range of standardised testing, is a notified body for protective clothing and can deliver CE marking and testing. Centexbel is also involved in standardization committees and offers technological advice and training to companies in Belgium or abroad, e.g. sustainability, environmental subjects, implementation of environmental management systems.

The research focus of Centexbel is on applied research, funded by private contract as well as state and international agencies (e.g. FP6, FP7, Eureka, Eragnet). Some well selected subjects for strategic research are followed, being:

- (i) Polymer formulation and extrusion processes (incl. biopolymers)
- (ii) Innovative finishing, coating and laminating formulations and technology
- (iii) Biomedical interactions of textiles (incl. biocidal activity, cytotoxicity)
- (iv) Intelligent textiles
- (v) Sustainable textile production



Instituto Tecnológico del Embalaje, Transporte y Logística ITENE is a Research Institute constituted in 1994 as a private non-profit Research center integrated with businesses, entities and institutions related to Packaging, Transport and Logistics.

Our mission consists of improving business competitiveness through the promotion of research, development, innovation and advanced technological services.

The R&D Divisions in ITENE involved within ECOTEXNANO project are: Safety & Security, Sustainability and ICT areas.

These three Divisions have a high experience within the following areas related to the tasks assigned within ECOTEXNANO: Exposure assessment: quantitative assessment of airborne nanoparticles by means of measurement devices (CPC, SMPS, APS, NSAM...) / Application of predictive models to carry out evaluation of hazard and risk assessment of nanoparticles: QSAR, QNTR... / Development of predictive models to predict toxicity, exposure, etc / Evaluation of effectiveness of risk management measures (PPEs, engineering controls, exhaustive ventilation...) / Development of procedures and strategies to manage the risk exposure of nanoparticles/ Life Cycle Assessment and Carbon Footprint of product and processes / Life Cycle Cost Analysis / Sustainability Assessment / Product and process ecoefficiency evaluation/ Web design and development / Mobile applications development / Information systems integration.



Fratelli Piacenza S.p.A. is a manufacturer of fine woolen fabrics, leader in the top segment of noble fibre fabrics for luxury market, and pure cashmere knitwear. It is supplier of fabrics to all world-leading fashion manufacturers (Zegna, Gucci, Prada, Louis Vuitton, Hermès among the others).

Based in Italian textile district of Biella it is one of the oldest textile industries of the world, founded in 1733 and from then on owned by the Piacenza family. The production strategy is based on “quality of excellence” obtained by strict control of production.

Piacenza keeps internal those production phases which give an added value perceived by the customer (for ex. raw material acquisition, finishing, inspection) or a production flexibility.

Piacenza competitive strategy is focused on maximum differentiation of the product, in terms of raw material choice, style, and color, and design, where it offers new, customized and/or exclusive fabrics in close cooperation with fashion stylists.

Piacenza strategic target is not to increase quantity but average price, enforcing market barriers based on design, know how, personalized service and sharp delivery. Flexibility of production is critical to keep costs under control in presence of reducing average lot dimension and shortening time to market. This tendency is expected to strengthen in the long run, as proved by the entitlement of two Thematic Expert Groups (TEG 7 and 8) of 7FP European Technology Platform to “mass customization” and “virtual prototyping instruments”, where Piacenza is participating as industry end user.



VINCOLOR forms part of a holding of 3 enterprises: CREVIN, VINTEX and VINCOLOR. The holding is a totally vertical organization, from product development to weaving, finishing and marketing, with a constant quality control over all production stages as evidenced under the ISO 9001 and 14001 certifications. Export currently accounts for 75% of the total turnover.

CREVIN is a family company that since 1976 has been dedicated to the production and marketing of upholstery fabrics. Pioneers in many ways, Crevin is always in the forefront of creating innovative fabrics that respond to needs for design and technical excellence. Crevin fabrics are sold in over 50 countries around the world.

VINTEX is the group’s manufacturing plant where the weaving of Crevin fabrics takes place. Fabrics are either produced in greige goods (raw fabrics that are later to be dyed), or yarn-



dyed fabrics, with the use of state-of-the-art, computer driven looms. All fabrics are subjected to thorough quality controls prior to their finishing. VINCOLOR is the group's dyeing- and finishing plant.

The experience of VINCOLOR in finishing dates back to 1988. Apart from the dyeing the most common finishings applied are easy-care treatments that add significant value to the end-product. Upon customer's requests fabrics can be finished with special flame protection and waterproof backings.

The groups Quality and Environmental Management Systems fulfill the requirements of the Standards ISO-9001 and ISO-14001. Under ISO 14001 an effective environmental management system has been implemented that focuses on the safety of the production cycle, from raw materials to the finished product, and lays emphasis on the efficiency of production processes (minimizing energy, gas and water usage) and the recycling of industrial waste.

Before their commercialization all fabrics are tested by European, independent Technological Centers in conformance with harmonized European product standards and technical specifications.

3. Impact of the project

3.1 Project Outcomes

- **Report on proposal for updating the Reference Document on Best Available Techniques (BREF) for the Textiles Industry** (current TXT BREF from July 2003).
- **Report on proposal for updating REACH Regulation** (Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals).
- **Report on proposal for updating other EU policies:**
 - **Regulation** (EU) 528/2012 concerning the making available on the market and use of **biocidal products**.
 - **Regulation** (EC) N° 1272/2008 on classification, labeling and packaging of substances and mixtures (**CLP**).

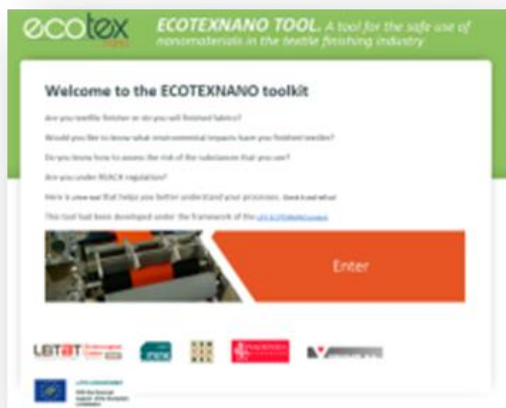
3.2 Definition of Risk Mitigation Strategies

- Avoid manipulating nanomaterials in a free particle state (i.e. dry nanopowders);
- Use good laboratory/ workplace practices, including the provision of adequate information and training for workers, and the use of adequate containers to store nanomaterials;
- Apply and design adequate administrative controls, including proper labeling and storage, implementation of cleaning and maintenance procedures, and limitation of the duration of the tasks and/or process involving the use of nanomaterials;

- Use properly designed LEV systems for conducting processes that cannot fit in a common partial enclosures suitable for handling particulate materials, such as fume cupboards or containment cabinets;
- Use PPE when engineering and/or administrative controls are not feasible or effective in reducing exposures to acceptable levels. PPE can include respirators, gloves, clothing, face shields, safety glasses, and other garments designed to protect the wearer.

3.3 Online Tool

Available at: <http://itene-ecotexnano.nunsys.net/>



A major outcome of ECOTEXNANO is the online tool. It is an innovative tool that aims to improve the knowledge on risk assessment of nanomaterials and to promote the safe use along their life cycle. It allows calculating the environmental, health and safety impacts of a future textile improving its environmental performance before being produced starting in the phase of design.

4. Past dissemination activities

The project partners have been active in disseminating the project's results by participating into fairs, congresses, conferences and workshops but also publishing news articles online or in specialised magazines. This includes:

- Oral presentation during ETP conference 2017 in Brussels
- Article in Noticiero Textil about ECOTEXNANO
- Article in the Newsletter of The Spanish Association of Textile Chemists and Colourists (AEQCT) in December 2016
- Poster presentation during LCA Symposium at SETAC 2016 in Montpellier
- Participation in a European projects' workshop on risk assessment and management strategies
- Poster presentation during LCM Congress 2015 in Bordeaux
- Poster presentation during SETAC Annual meeting 2015 in Barcelona
- Oral presentation during Textile2020 workshop 2014 in Brussels
- Project presentation during Techtexil Fair 2015 in Frankfurt
- Project presentation during BUONAPARTE-E LCA workshop 2015 in Turku



- Oral presentation during Dornbirn Man-made Fibers Congress 2014 in Dornbirn
- Press article in the local press “Diari de Terrassa”
- Specialized press article in Nano safety cluster newsletter in 2015
- Specialized press article in Unitex, 2015
- EURATEX ETP Newsletter, 2016
- Internet articles in: PinkerMod , Noticiero Textil (2X), Ediciones Sibila

Below is a list of the most important dissemination actions done that have been reported on the ECOTEXNANO website:

- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=34:ecotexnano-in-the-news-noticiero-textil-publishes-an-article-about-the-project&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=30:online-ecotexnano-tool-launched-try-it-for-free&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=33:poster-presentation-during-lca-symposium-at-setac-2016&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=29:30m-meeting-hosted-by-leitat-in-terrassa&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=28:2nd-project-newsletter-life-cycle-analyses-and-risk-analyses-of-nanomaterials-used-in-textile-finishing&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=27:review-of-the-workshop-on-risk-assessment-and-management-applied-to-nanomaterials&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=26:26m-meeting-in-valencia&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=25:join-workshop-on-risk-assessment-management-strategies-applied-to-nanomaterials&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=32:poster-presented-during-lcm-congress-in-bordeaux&catid=13&Itemid=121



- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=24:ecotexnano-exhibiting-at-the-techtexsil-fair&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=31:poster-presented-during-setac-annual-meeting-2015-in-barcelona&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=23:potential-of-cooperation-between-ecotexnano-and-life-textileleather&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=22:ecotexnano-buonapart-e-lca-workshop&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=21:ecotexnano-18-month-meeting-at-centexbel&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=20:generar-automaticamente-desde-el-titulo&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=19:ecotexnano-inpress-dornbirn-mfc&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=18:ecotexnano-dornbirn-mfc&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=17:ecotexnano-textile2020-workshop&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=16:auto-generate-from-title&catid=13&Itemid=121
- http://life-ecotexnano.eu/index.php?option=com_content&view=article&id=10:news-test-1&catid=13&Itemid=121

Also, the project's news have been diffused on Twitter through the ECOTEXNANO account:
<https://twitter.com/ecotexnano>



5. Future communication activities

In order to continue the widespread and the promotion of the achievement and results of ECOTEXNANO, we will define the communication strategy, dissemination actions, and the adoption approach to be performed after the end of the project and during at least the five upcoming years. The Communications and dissemination strategy and approach will:

- Promote the benefits and opportunities generated by the project.
- Reinforce our vision and project objectives.
- Encourage a consistent, timely, targeted, accurate and secure flow of information.
- Support effective knowledge sharing.

5.1 Use of the ECOTEXNANO logo



The design of the ECOTEXNANO logo aims to visualise as best as possible the activities of the project, being an environmental project focusing on nanotechnologies used in the textile finishing industry. The colours focus on the environmental aspect (green) and textile dimension (red). The logo has been used and will continue to be used in every possible communication as it eased the recognition of the project by the audience.



5.2 Use of the LIFE logo

The logo of LIFE+ has to be included in all communication or publication about the ECOTEXNANO project by the partners collectively or by any one of the partners individually, including conferences or seminars. For audio-visual material, the credits at the beginning or at the end shall include an explicit and readable mention of the LIFE+ support (e.g. “With the contribution of the LIFE financial instrument of the European Community”).

The LIFE+ as well as the guidelines for its use are available on the programme’s website at the following link:

<http://ec.europa.eu/environment/life/toolkit/comtools/resources/logos.htm>

Both the logo of ECOTEXNANO and the logo of the LIFE+ will be included in all the dissemination documents and publications (leaflets, presentations, etc.).

5.3 Target Audience

The target groups are mainly the ECOTEXNANO stakeholders that have been involved along the project. Key stakeholder’s categories are:

- Textile professionals using nanomaterials
- Industries developing textile with nanomaterials
- Consultants/Experts
- Research Centres
- Public administrations
- General Public

5.4 Main Project Result to be disseminated

The ECOTEXNANO tool is the main output of the project and during the after-life of the project, it will be the main result to promote to the textile finishing industry. Thank to this tool, the user can:

- improve their knowledge on risk assessment of nanomaterials and to promote the safe and green use along their life cycle
- compare the nano-textiles and the conventional textile finishing products to quantify the achieved environmental and risks improvement
- use it as a basis for the further development of a network platform to share data with stakeholders including scientific committees, EU policy makers and international researchers, filling the knowledge gaps about nanomaterials.

5.5 Digital Communication Channels

1. ECOTEXNANO website:
 - a. The website <http://www.life-ecotexnano.eu> provides information on the project, its partners, background material and all projects' public documents.
2. Websites of partners: Each of the partners will communicate ECOTEXNANO results through dedicated pages on their websites:
 - a. LEITAT International Projects Office web site: <http://www.ipo.leitat.org/>
 - b. Centexbel web site: <http://www.centexbel.be/>
 - c. ITENE website: <http://www.itene.com/>
 - d. Piacenza website: <http://www.piacenza1733.com/>
 - e. Crevin website: <http://www.crevin.com/>
3. Social media of partners: New media are a great way to communicate about innovation activities in order to reach large audiences. Some partners have Twitter accounts that will be used for this purpose.
 - a. <https://twitter.com/Leitat>

5.6 Physical Communication Channels

1. Conferences & Workshops
 - a. ETP annual Conference
 - b. Techtexil
 - c. TEXMEETING BY TEXFOR – 29 JUNY
 - d. AEQCT Symposium
2. Meetings with partners
3. Visits of the consortium partners

6. Dissemination of the ECOTEXNANO Tool

ECOTEXNANO tool helps to enhance the knowledge on environmental and risk assessment of nanomaterials to be applied in finishing processes of textiles. Therefore, this innovative tool is aimed to the finishing textile industry, assisting associated companies to apply best available techniques and good practices when they are dealing with nanomaterials.

In the following, the structure and functionalities of the tool are described.

Structure: the tool is composed by **three fundamental modules**, each of them covering a strategic area of the characterization of the environmental, health and safety (EHS) risks of ENMs on a regulatory basis.



This module is designed to **support the calculation of the levels of exposure to nanomaterials in occupational environments (occupational risk)**

assessment) and the prediction of the number of substance released in the environment (environmental risk assessment) from a specific process involving nanomaterials as such, in mixture or as a part of articles (life-cycle assessment).



This module includes four environmental indicators: Carbon footprint (g CO₂ eq.), Waste production (g), Water consumption (L) and Energy consumption (MJ).

- **Carbon footprint** calculates the total greenhouse gases emissions of the different materials and processes involved in the finishing of textiles using the characterization factors of global warming potential proposed by the IPCC (Intergovernmental Panel on Climate Change) in the year 2007, over a period of 100 years.
- **Resource depletion** calculates the amount of resource that it is lost during the finishing textile process.
- **Water consumption** calculates the water consumption during the finishing production of the functional textile, that is, the amount of water consumed as a resource during the elaboration of the materials used and in the fulfilled processes. It includes fresh water obtained from different natural sources. The Water depletion indicator from the impact assessment method, Swiss Ecoscarcity 2006, has been the one used.
- **Energy consumption** calculates the total accumulated demand of energy provided by different primary sources, both renewable and non-renewable included. It has been used the European Cumulative Energy Demand (CED) indicator from the method published by Ecoinvent.



This module is intended to support the exchange of information on issues concerning the environmental, health and safety (EHS) assessment of nanomaterials used in textile industry.

To this end, users can search for references in the database while registered users can also share documents with relevant information or data measured on different properties of nanomaterials in the inventory. A free text field is dedicated to users' comments and suggestions. Documents, relevant links, Risk Management Measures specifications, data on concentration and good practice documents generated during the development of the tool can be found in this section.

7. Estimated budget

Partners will use their current activities in the field of textile and nanoparticles to promote the results of the Project. However, travelling and participating to conferences or other events will have some costs. Partners will try to benefit from synergy effects when communicating about ECOTEXNANO. Furthermore, some the digital communication channels have a very low cost of usage. Below an estimation of the costs for the upcoming years of the after-life period of the project.



Concept	Coste
Travelling (5 travels, 200€ each)	1000€
Participation in conferences (5 conferences, 100€ each)	500€
Communication materiales (Printing leaflets or reports)	300€
Organization of workshops	800€
Total	2600€
