



Itaclab Srl
EPR – Analysis of the potential economic
value of waste

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The APEOs Elimination Investigation Report is in fulfillment of the [Itaclab Srl](#) Commitment to the DETOX solution which were made public on 15th March 2016
Itaclab Srl supports the Detox solution to ban hazardous chemicals from fashion



This report was prepared on behalf of Itaclab Srl by Blumine Srl

Blumine Srl is an independent consulting company specialized in supporting textile and fashion companies in sustainability projects.



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1 Introduction: purpose and scope of the EPR report

In addition to the main theme of hazardous chemicals management, the Detox commitment also envisages a commitment to "Responsible Design and Consumption or Living - via Extended Producer Responsibility¹" - (art 6.). The goal is to ensure a non-polluting and circular approach to companies' productive activities throughout the entire product life cycle: from procurement to design through the use, reuse, recycling and disposal of products and resources.

The Detox commitment includes the publication of a report analyzing the economic value of production waste, by-products and leftovers, and their management.

This study reports the overall budget of economic costs and environmental impacts, incurred or avoided by Itaclab Srl with its waste management system, in line with best circular practices.

Definitions

In line with industrial uses and Italian and European legislation, this report defines:

Waste: according to the European [Directive 2008/98/EC on waste](#) and Italian law, [art.183, paragraph 1, letter a Dlgs 152/2006](#) waste is defined as "any substance or

¹ From the Detox Commitment text:

(11) Extended and Producer Responsibility is individual and global company responsibility to ensure the whole lifecycle of a product and the delivery of a function (from sourcing and design to use, re-use and recycling or final decontamination and treatment):

- *protects the well-being of the natural environment, stays within planetary boundary limits and supports the socio-economic well-being of workers and local communities;*
- *ensures the system for end-of-life collection achieves high use of product and material quality through effective collection, disassembly and re-use or recycling;*
- *ensures the system for reuse (or any life-extension of the product), recycling and final treatment incentivises changes in design by the product designer both financially, through internalization of the real own-brand/differentiated end-of-life costs into the company business model, and through information feedback, including to other actors in the extended life-cycle;*
- *includes supporting and implementing fully circular resource use and full resource stewardship (recognizing that natural resources are not 'owned' but 'borrowed' to meet a need) and the duty to return all resources to their natural uncontaminated state after making use of them.*

(12) Responsible Design and Consumption or Living business models – are systems of products and services that are designed to deliver functions to meet needs, integrating full circularity and EPR (as defined above). These systems include a comprehensive process for identifying all lifecycle aspects, considering the most responsible design, production, product use and closed-loop reuse and recycling, aiming to maximize the use of closed-loop and slow-loop manufacturing and value creation. Closed loop systems should give preference to local solutions where possible.

object which the holder discards or intends or is required to discard". The European Waste Catalogue (according to the [Commission Decision 2014/955/EU](#)) assigns different waste codes with a variety of hazard, recyclability, transport, installation permits and other characteristics. Management costs - for paid disposal of waste destined for energy generation or landfill - or market value - for waste sold or ceded for free, diverted to new production processes² - vary accordingly. Typically, the textile and accessories manufacturing generates: 1. hazardous waste: sludge, fluids...; 2. non-hazardous waste: yarns, fabrics, metals...; packagings; machineries.

Byproduct: according to the European [Directive 2008/98/EC on waste](#) and Italian law, [art. 184 bis Dlgs 205/2010](#) *"A substance or object, resulting from a production process, the primary aim of which is not the production of that item, may be regarded as not being waste (...) but as being a by-product only if the following conditions are met: a) further use of the substance or object is certain; b) the substance or object can be used directly without any further processing other than normal industrial practice; c) the substance or object is produced as an integral part of a production process; and d) further use is lawful, i.e. the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts."*

Leftovers: for the purposes of this analysis, it is worth to distinguish those production residues of lesser value than the original ones, not yet waste or byproducts, which are potentially still usable, retaining original use, but only outside the originally destined channels. Eg. inventory, unsold products, old samples, etc.

Declaration of waste disposal (*Modello Unico di Dichiarazione ambientale - MUD*): form for official declaration of quantities of waste disposed in one year, in kilograms, per category of waste. According to the [Directive 2008/98/EC on waste](#) and Italian Law [n. 70/1994](#), accounts for waste generated by economic activities, those collected by the Municipality and those disposed of, started to be recovered, or transported, in the year preceding the declaration. It is normally submitted by April 30 of each year.

² This case is defined as *"End-of-waste status: Certain specified waste shall cease to be waste (...) when it has undergone a recovery, including recycling, operation and complies with specific criteria to be developed in accordance with the following conditions: a) the substance or object is commonly used for specific purposes; b) a market or demand exists for such a substance or object; c) the substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products; and d) the use of the substance or object will not lead to overall adverse environmental or human health impacts"* ([Directive 2008/98/EC on waste](#) and Italian law, [art. 184 ter Dlgs 205/2010](#))

Overview of Itaclab Srl processes

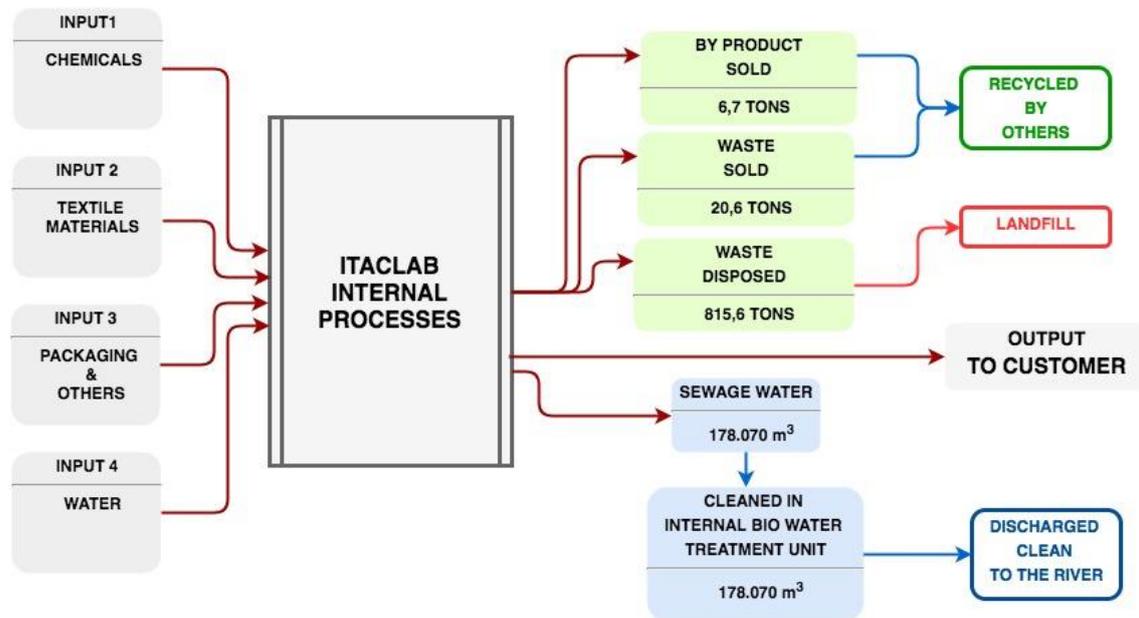
Itaclab Srl is a provider of finishings and special effects treatments - including washhouse and dye house treatments. The company offers a full range of services: from the conception, to the prototyping, the development and the industrialization of jeans wear collections.

Treatments implemented in the company's premises in Grottammare, AP, Italy, on denim jeans include wet and dry processes: tinting, stone washing, resin application, coating, sponging, dyeing and over dyeing, pigment and enzyme spraying, washing and stonewashing, grinding and tacking, whiskers and 3d whiskers making. Some of the processes use very intensively various chemicals and water.

Our commitment to ensure the best performances in terms of both style and sustainable quality is based on three pillars:

- the role of the internal laboratory for chemical and physical analysis that runs systematic compliance testing to the company's safety, environmental and performance standards of all the new chemicals used in the treatments. When a customer brand client asks for new special treatment, the lab tests the required chemicals for compliance to Itaclab standards. Itaclab policy is that short of lab approval the customer request is rejected.
- the role of the R&D department that systematically test products and chemical treatments with lower impact to replace those with higher impact and less technological.
- the partnership approach with our chemicals suppliers, with whom we establish a transparent relationship for complete information on chemical formulations.

Image 1 - Company's waste, byproducts, leftovers and water management flow



2 Methodology

Itaclab Srl has conducted an internal investigation aimed to gather, from analytical or industrial accounting or by estimate, the information needed to integrate the MUD: the amount of waste water; the amount of waste, byproducts and leftovers sold or ceded for free³; byproducts internally re-used; costs, revenues and savings related to such waste management.

Waste was analyzed in economic terms and volumes and aggregated according to the following categories: Sludge, Packagings, Textiles, Metals, Others.

The results were processed in the form of tables and charts:

1. Material volumes:
 - a. Waste material balance 2016:

³ it is assumed that waste sold or ceded for free becomes a raw material in a new production cycle. Therefore, it can be considered as recycled.

- Balance sheet: the data related to waste management for the year 2016 have been reassembled in order to highlight not only the waste disposed of, whether for free or not, but also that diverted from landfill through reuse or sale of byproducts and leftovers, to quantify the waste potentially generated by the production activities.
 - Diagram: the aggregate figures for the 2016 waste balance were reported graphically to highlight the portion of waste diverted, sold or ceded free of charge and disposed of on the total of the potential waste.
- b. Waste water balance 2016:
- Balance sheet: the data related to wastewater management for the year 2016 were reassembled in order to highlight not only those discharged, but also those diverted through of recovery systems, to quantify the wastewater potentially originating by the production activities.
 - Diagram: the aggregate figures for the 2016 wastewater balance were reported graphically to highlight the portion of wastewater diverted and discharged on the total of the potential wastewater.
2. Waste financial balance 2016:
- Balance sheet: the data related to waste management for the year 2016 have been reassembled in order to highlight not only the actually recorded values for the water discharge, the wastewater treatment plant management, the disposal, the transportation and the eventual sale of waste, byproducts and leftovers, but also the internal costs for the waste management structure (personnel, warehouse, etc.) and the savings generated by the sale, the non-disposal of waste and the non-purchase of raw materials and the water recovery and the closed cycles beyond the water one.
 - Diagram: the aggregate figures for the 2016 waste economic balance were reported graphically to highlight the savings, the sales revenues and the costs to the total potential costs of waste management.

3 Outcomes

3.1 Waste material balance 2016

Considering, in addition to waste disposed of, the one diverted through the re-use or sale of byproducts and leftovers, the quantity of waste avoided is 3,2% of the quantity of waste potentially generated by the production activities.

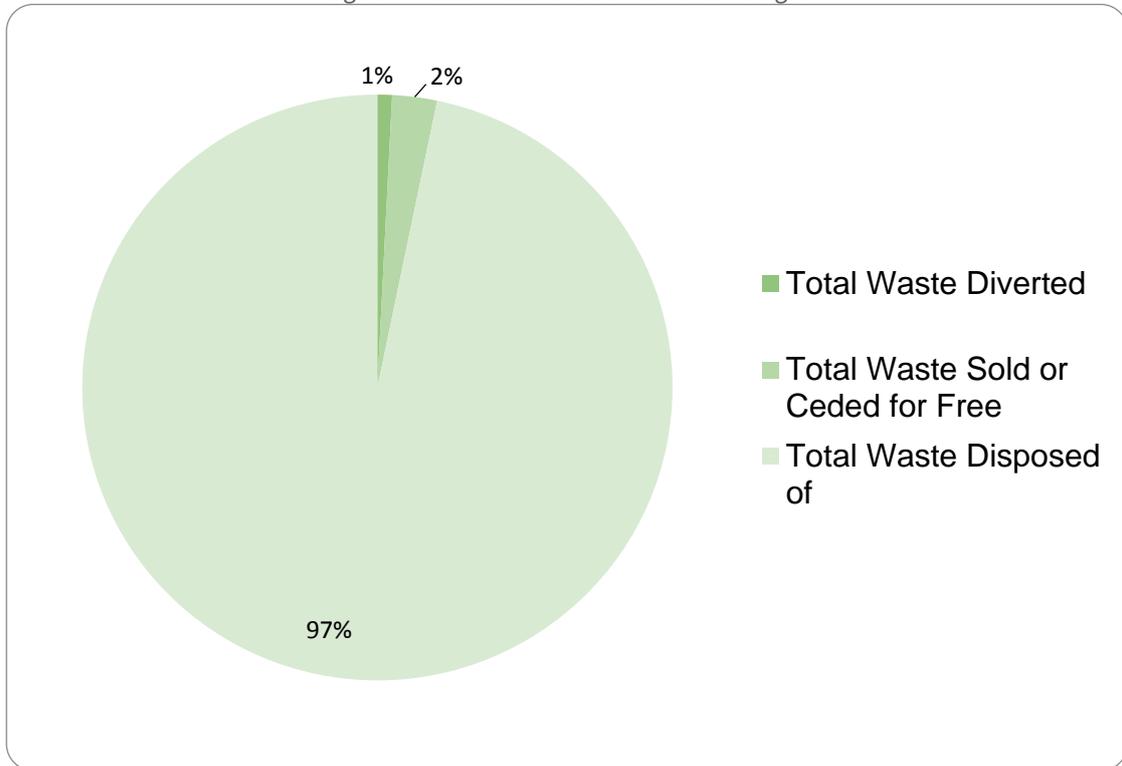
This result was achieved through the following waste management activities:

1. the re-use of 6.750 kg of leftovers, equal to 0,8% of the annual potential waste, corresponding to 15.000 pairs of jeans which were given to a local charity for free
2. the free or paid disposal for other external recycling purposes of 20.640 kg of waste, that is 2,4% of the annual potential waste

Image 2 – Waste material balance sheet 2016

YEAR 2016	kg	%
Waste Potentially Generated by the Production Activities	842.988	100,0%
Leftovers re-used internally, sold or ceded for free	6.750	0,8%
<i>Total Waste Diverted</i>	<i>6.750</i>	<i>0,8%</i>
Total Waste Managed	836.238	99,2%
Sludge/Waste aqueous solution	814.640	96,6%
Packagings	17.040	2,0%
Others	4.558	0,5%
Total Waste Sold or Ceded for Free	20.640	2,4%
Total Waste Disposed of	815.598	96,8%
Waste Reduction achieved	27.390	3,2%

Image 3 - Waste material balance 2016 - diagram



3.2 Waste water balance 2016

In the last year, the sewage plant produced 178.070 m³ of wastewater equal to 26,45m³ per 1.000 kg of [ennobled denim](#). After treatment in the internal biological plant, clean water is discharged into the Tesino river, under the control of the responsible government body.

3.3 Waste financial balance 2016

The annual negative balance of Itaclab Srl's waste and water management is 195.696€, that is 95,22% of the potential cost, that is 205.517€ . The waste reduction

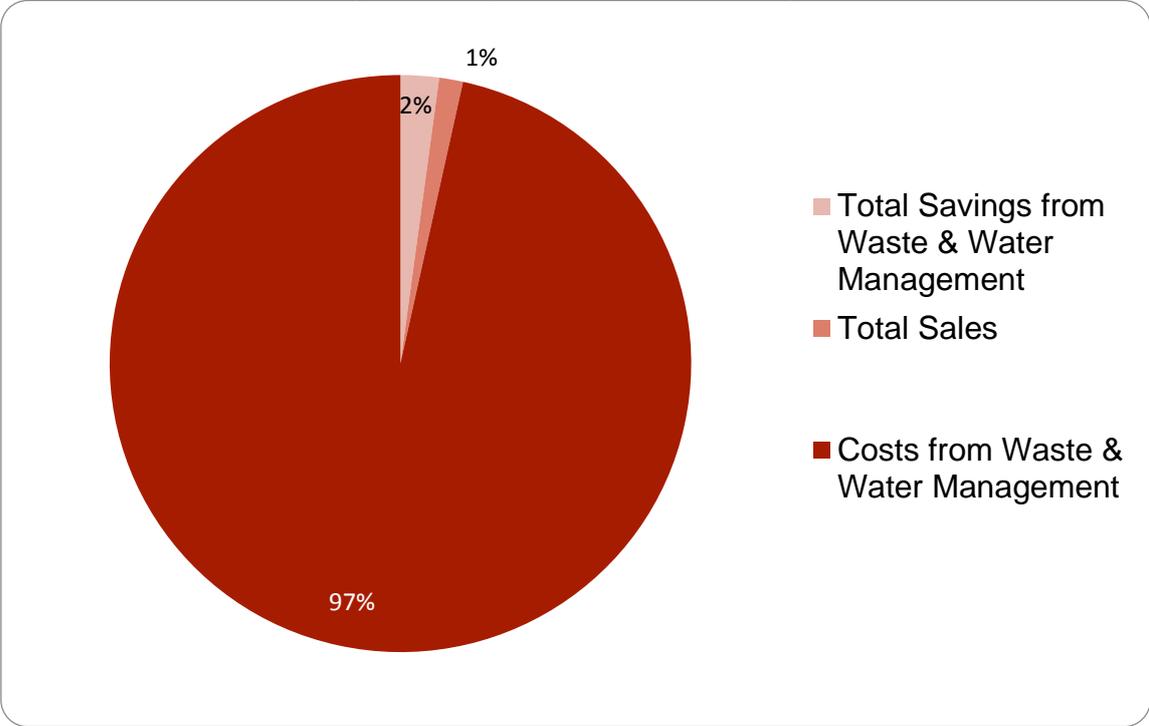
achieved is 7.102€, that is a 3,46%, share of costs avoided resulting from the following waste management activities:

- 2.719€ sales of waste: for other external recycling purposes
- 4.832€ savings for the avoided costs of disposal of byproducts and waste sold

Image 4 – Waste financial balance sheet 2016

YEAR 2016	€	%
Potential Cost of Waste & Water Management	€205.517	100%
Savings from waste disposal costs (byproducts, leftovers and waste sold or ceded for free)	€4.382	2,1%
Total Savings from Waste & Water Management	€4.382	2,1%
Costs of waste disposal (internal operations and third parties' services)	€109.380	53,2%
<i>Of which, sludge</i>	€94.380	45,9%
Cost of sewage plant management	€89.035	43,3%
Costs from Waste & Water Management	€198.415	96,5%
Sales of waste	€2.719	1,3%
Total Sales	€2.719	1,3%
Waste & Water Management Negative Balance	€ 195.696	95,22%
Waste Reduction achieved	€ 7.102	3,46%

Image 5 – Waste financial balance 2016 - diagram



4 Conclusions and next steps

The waste management system implementation, in line with best circular practices: the re-use of leftovers, sales of waste for other external recycling purposes, savings for the avoided costs of disposal of byproducts and waste sold, allowed Itaclab Srl to cut the economic and environmental costs in 2016 by:

- 27,4 t or 3,2% in volumes
- 7.102€ or 3,5% in value

These encouraging results give directions on how to continue to apply Itaclab Srl's "Responsible Design and Consumption or Living - through Extended Producer Responsibility", which we will account for in the forthcoming reports.

Itaclab Srl, as part of the Italian DETOXLeader Group together with Canepa Spa, Miroglio Group, Italdenim Spa, Besani Srl, Berbrand Srl, Tessitura Attilio Imperiali Spa, Zip Gfd Spa, Cotonificio Olcese Spa, Ditta Gaetano Lanfranchi Spa, Fellicolor Spa, Mabo Spa, Itaclab Srl, Taroni Spa, Alesilk Sas, Dienpi Srl, Filmar Spa, Filmar Nile Textile S.A.E., Imbotex Srl, Italtexil Sarata Srl, Maglificio Ripa Spa, Monticolor Spa, Ongetta Srl, Calzificio Eire Srl, Texcene Spa, is fully aware that only with the active participation of the entire fashion industry it is possible to deliver the desired outcomes on a global scale.