



# LIFE CYCLE ENGINEERING

Empowering your positive impact

## TOOL FOR ENVIRONMENTAL ANALYSIS

upgradeable with social, safety  
and quality assessment options

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## OUR WEB-BASED AND EXCEL-BASED PLATFORM FOR DEVELOPING CSR/LCA & EPD TOOLS

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## CSR/LCA & EPD

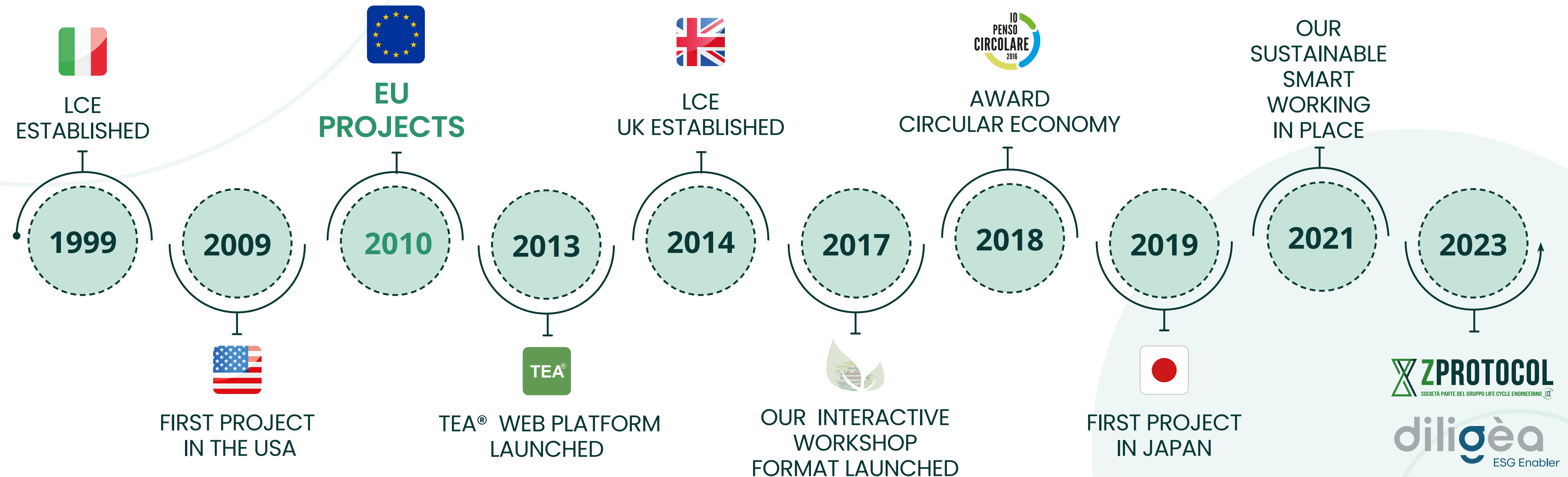
Corporate Social Responsibility  
Life Cycle Assessment  
& Environmental Product Declarations



# LIFE CYCLE ENGINEERING

## Our Milestone

**Life Cycle Engineering** (LCE) is an independent consulting firm, providing **professional solutions and tools** for Life Cycle Assessment (LCA), eco-design, environmental communication and regulatory compliance to private companies and business associations





# ZPROTOCOL & DILIGEA

As a **team of experts** from different but complementary realities, **we tackle sustainability issues together** with an integrated, entrepreneurial approach.



ZPROTOCOL is an **IT company** specialized in the development of **customized web or Excel based platforms** to support data collection and sustainability analyses of products and processes.

After about **ten years** of collaboration, ZP joined the LCE Group in 2023 to improve the development of **TEA platforms**.



Established in **2023** with BGR Tax & Legal, a tax consultancy firm with offices in Turin and other Italian cities, **DILIGEA is a boutique consulting firm** that offers integrated support and assistance services on **environmental, social, and governance issues**.

In response to the clear market demand for a single provider of **ESG services**, the existing collaboration between LCE and BGR has now been strengthened and enhanced.

[www.diligea.com](http://www.diligea.com) 

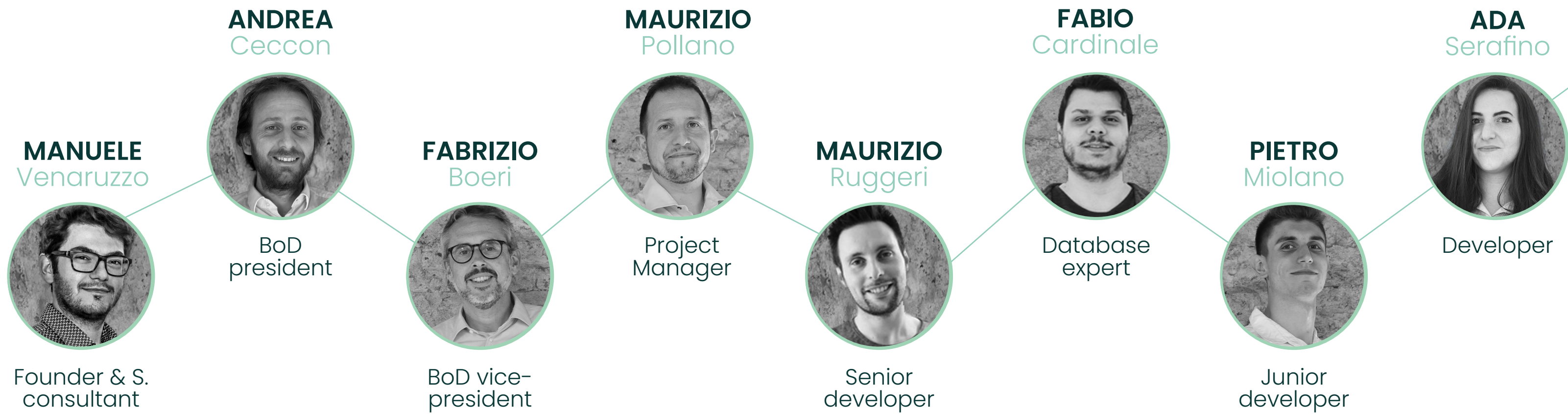
# ZPROTOCOL

## Our Team

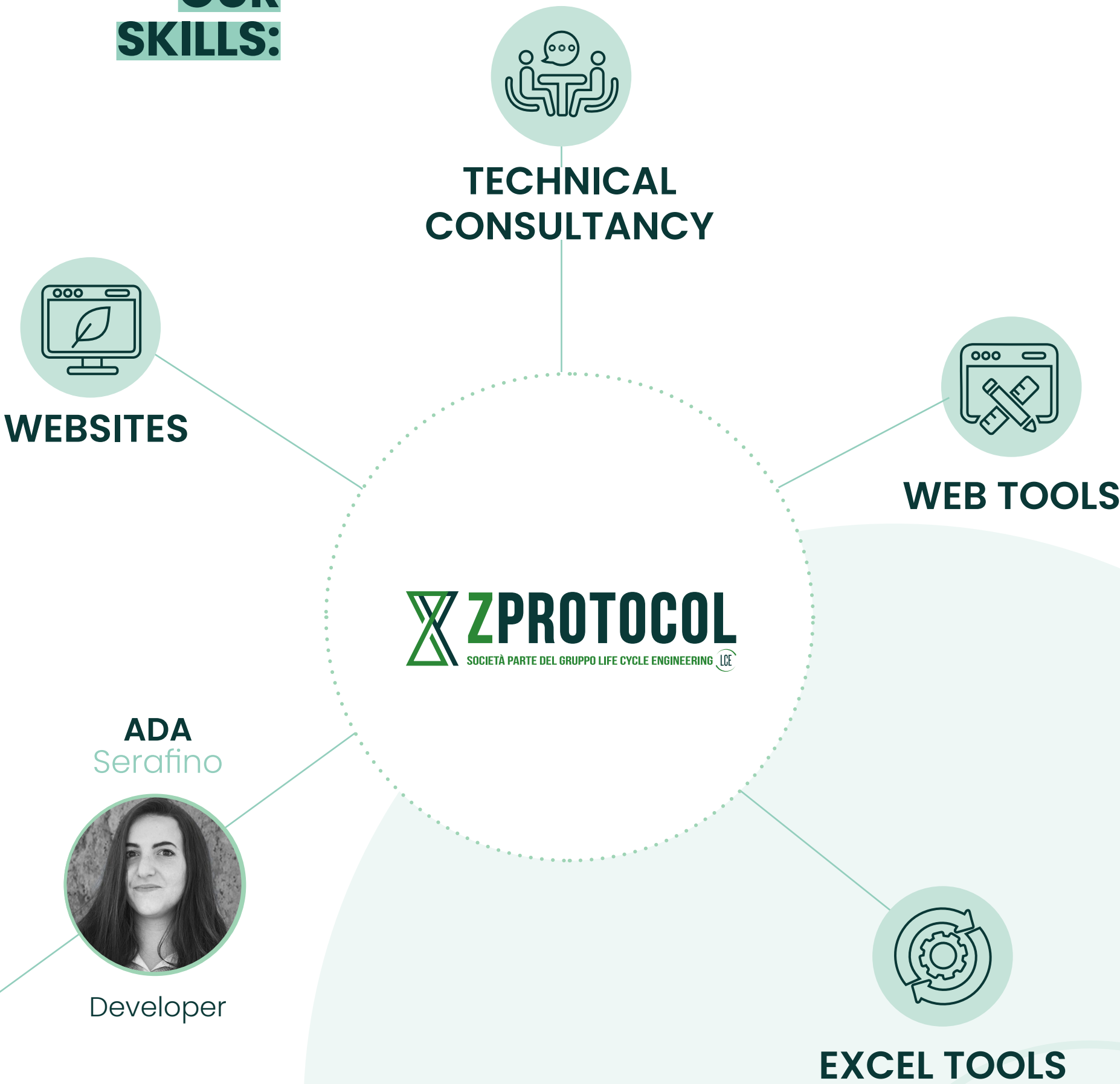
ZProtocol Srl was born on 1 March 2017 from the union of **passions and IT and design skills.**

In order to better follow increasingly large and structured customers and projects, the ZProtocol team has expanded and since **November 2023 has joined the Life Cycle Engineering group**, historic customers and now partners.

### MEET OUR TEAM



### OUR SKILLS:

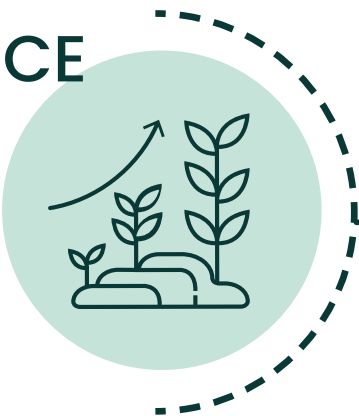




# LIFE CYCLE ENGINEERING

## Our Team

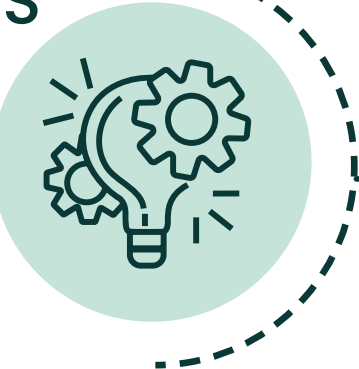
>25  
YEARS OF  
EXPERIENCE



### On specific fields

LCA/EPD/CSR analysys and webtool, eco-design, eco-labelling, carbon footprint, environmental communication, environmental law

>500  
PROJECTS



Developed to support companies sustainable business

>35  
CONSULTANTS



Inter-disciplinary skills



**LAURA**  
Management Engineer



**ASSUNTA**  
Environmental Engineer



**GIULIO**  
Environmental Economist



**FABRIZIO**  
Environmental Engineer



**PAOLA**  
Chemist



**SIMONA**  
Accountant Assistant



**BARBARA**  
Civil Engineer



**GIAMMARCO**  
Environmental Scientist



**SARA**  
Graphic Designer



**STEFANO**  
Mechanical Engineer



**ALICE**  
Materials Engineer



**ALESSIA**  
Graphic Designer



**MASSIMO**  
Graphic Designer



**GIAN LUCA**  
LCA Engineer



**RICCARDO**  
Environmental Engineer



**CHIARA**  
Chemical Engineer



**ELISA**  
Materials Engineer



**DAVIDE**  
Energy Engineer



**STEFANIA**  
Agronomist



**SONIA**  
Environmental Engineer



**ANNA**  
Chemical Engineer



**MASSIMO**  
Energy Engineer



**MARTINA**  
Environmental Scientist



**ELISABETTA**  
Environmental Scientist



**MAURIZIO**  
IT and Web Developer



**FRANCESCA**  
Communication Assistant



**ALESSANDRA**  
Industrial Chemist



**LUCA**  
Energy Engineer



**PAOLA**  
Administration and Human Resources



**MYRTA**  
Communication Assistant



**FRANCESCA**  
Industrial Ecologist



**ELENA**  
Communication Assistant



**LORENZO**  
Environmental Scientist

# EUROPEAN PROJECTS

## Focus

LCE owns **extensive and relevant experience** in participating in European and International projects (i.e. H2020, LIFE, INCO, CRAFT, INTERREG, and GROWTH) and is currently involved in **several Horizon 2020 as well as LIFE+ projects.**





# EUROPEAN PROJECTS

Focus – LIFE

© LCE – Edition 2024



2010

**INTEND**

Definition of an EPD system that can be applied at international level and its implementation in two pilot countries (Sweden and Italy)



Conception Optimisée pour la Réduction de l'Impact des Nuisances Environnementales

**ECONOMICK**

Energy consumption and CO<sub>2</sub> and no emissions minimized in an intermittent ceramic kiln

**RAPIDRY**

Rapid drying of ceramics reducing energy consumption and CO<sub>2</sub> emissions

2024



Heat it yourself for sustainability: circularity in energy intensive industries



**GREAT**

Growing resilience agriculture



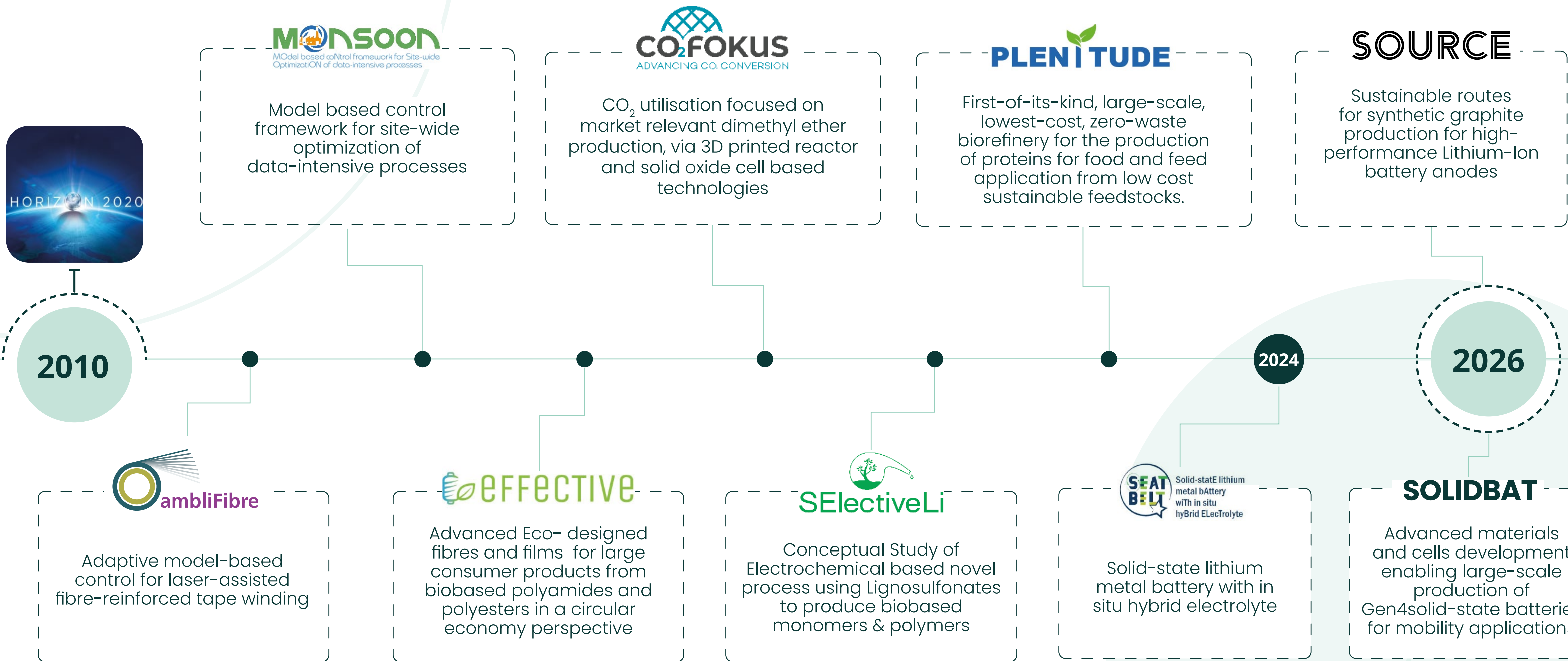
**SANITSER**

Sanitary-ware production: use of waste glass for saving energy and resources

2026

# EUROPEAN PROJECTS

Focus – HORIZON 2020





# INTRODUCING TEA<sup>®</sup>

## THE CONTEXT WHERE TEA<sup>®</sup> OPERATES

Tool for a **life cycle-thinking environmental analysis**,  
upgradeable with social, safety and quality assessment options.



### ANALYZE

To report and **improve**  
environmental **sustainability**



### ANALYZE

To report and **improve safety**  
**and quality** management



### DIGITALIZE

Organizational **tools**

# INTRODUCING TEA®

## TOOL FOR A LIFE CYCLE-THINKING ENVIRONMENTAL ANALYSIS

**TEA® is a web-based platform** that support companies in process/product data collection and analysis and give back suitable assessments such as LCA/CSR reports and EPDs for management and communication purposes.

### WHY

Tea® provides quick, **easy and reliable answers to the stakeholder's requests** regarding the environmental performance of your products and/or your organisation.

### WHO

Tea® is addressed to **multi-site companies, corporations and business associations** that require an easy-to-use solution for data acquisition, cleansing and reporting to communicate their CSR or product environmental performances.

### WHAT

Tea® collects data about environmental, economic and social aspects. **A customized database is shaped to collect useful information** and data to elaborate performance Indicators for several purposes: CSR, LCA, EPD, LCC, SLCA and circular economy initiatives.



# HOW TEA<sup>®</sup> WAS BORN AND WORKS

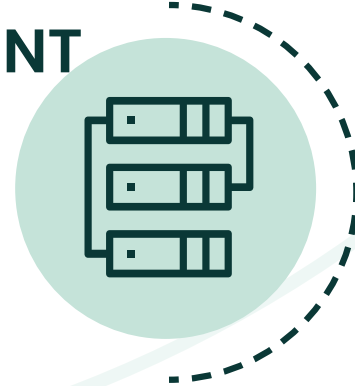
TO DEVELOP A CUSTOMISED VERSION OF TEA ≈ 6 MONTHS

## 1 DESIGN



THE WEB-TOOL IS DESIGNED IN CLOSE CONTACT WITH YOU IN ORDER TO BE ADAPTED TO YOUR SPECIFIC NEEDS. USERS AND ACCESS RIGHTS, ALGORITHMS, DATABASE AND EXPECTED REPORTS ARE CAREFULLY DEFINED AND DESIGNED AT THE BEGINNING OF THE ACTIVITIES.

## 2 IT DEVELOPMENT



OUR IT PARTNERS DEVELOP THE WEB-TOOL FOLLOWING THE CHARACTERISTICS DESCRIBED IN THE FUNCTIONAL ANALYSIS.

## 3 RELEASE AND USE



AFTER SHARING A PRELIMINARY VERSION (βVERSION) AND COMPLETING THE BUG-FIXING, THE WEBTOOL IS READY FOR USE. WE ORGANIZE TRAINING SESSIONS FOR USERS WHO HAVE TO USE THE TOOL.

## 4 CUSTOMER SERVICE



WE PROVIDE TECHNICAL AND IT SUPPORT BOTH DURING THE LEARNING AND THE USE PHASES



**Data collection by**  
multi-sites companiers  
(on-line questionnaires)



**Customized environmental**  
(LCA) data base by sector



**Elaboration of indicators**  
and reports



**Communication,**  
Green marketing, positioning  
also by means of suitable  
certification

# INTRODUCING TEA®

## EXCEL-BASED OR WEB-BASED TOOL

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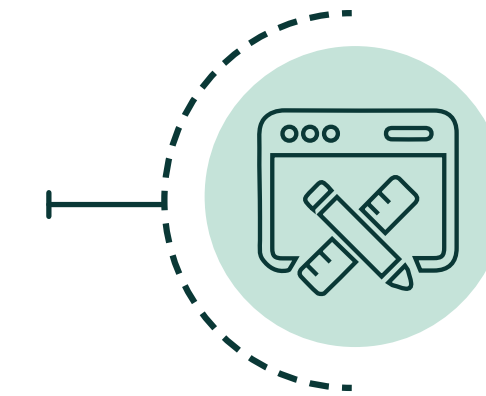
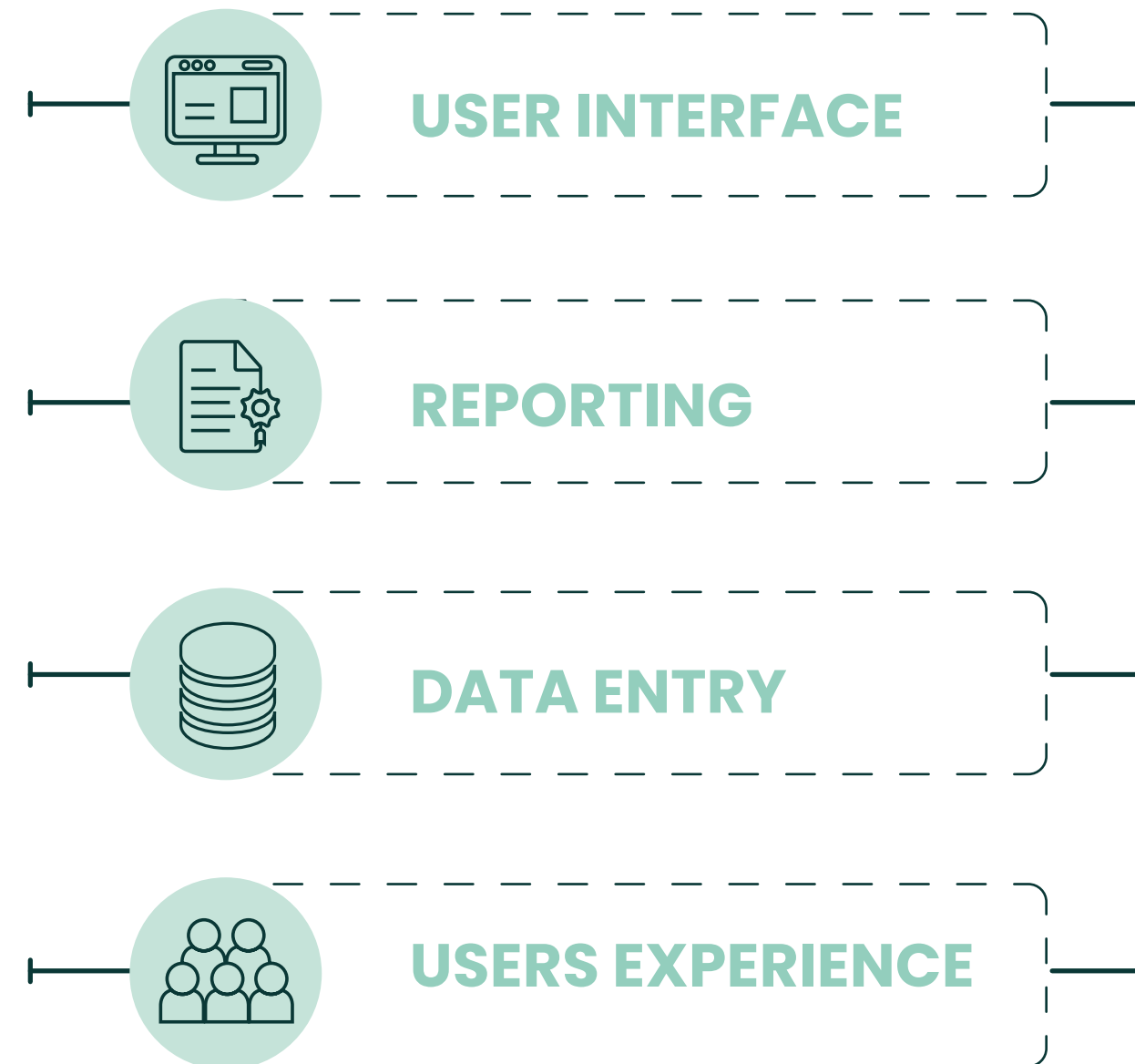
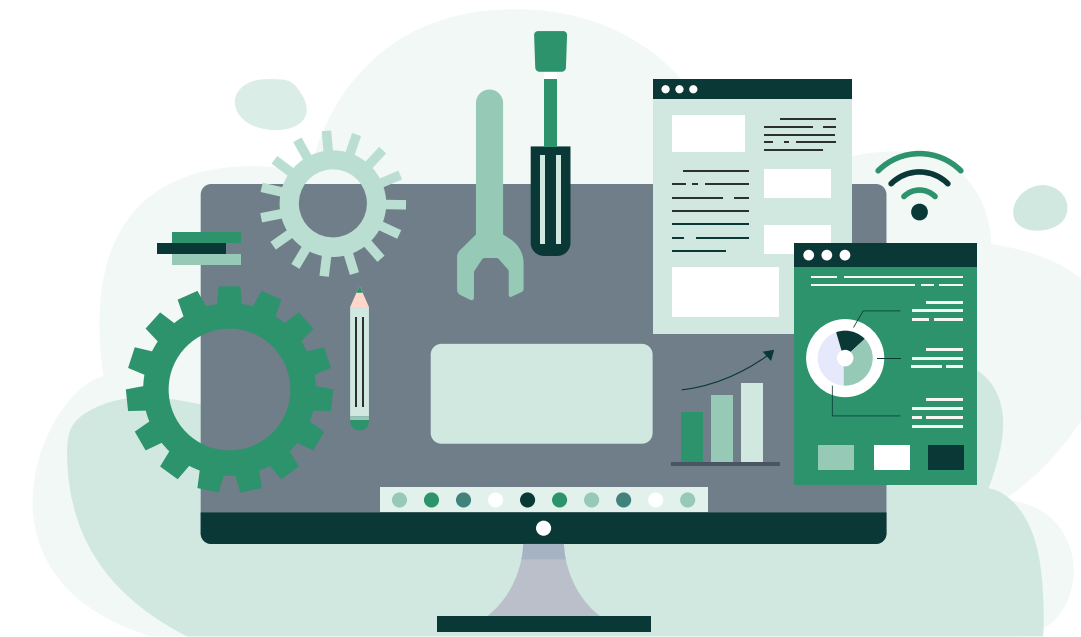
### EXCEL-BASED TOOL

Spreadsheet with **optimized interface**  
through controls and buttons

LCA Results  
in **PDF format**

**Manual data entry** into the  
calculation form for each product

Suitable for an **expert user** who knows  
deeply the production process  
(e.g. product manager)



### WEB-BASED TOOL

Web page **with login information**,  
company's brand identity **customized**

LCA Results on **web page**,  
exportable in various formats

Primary data **automatic update**,  
preloaded in the tool with  
predefined and verified procedures

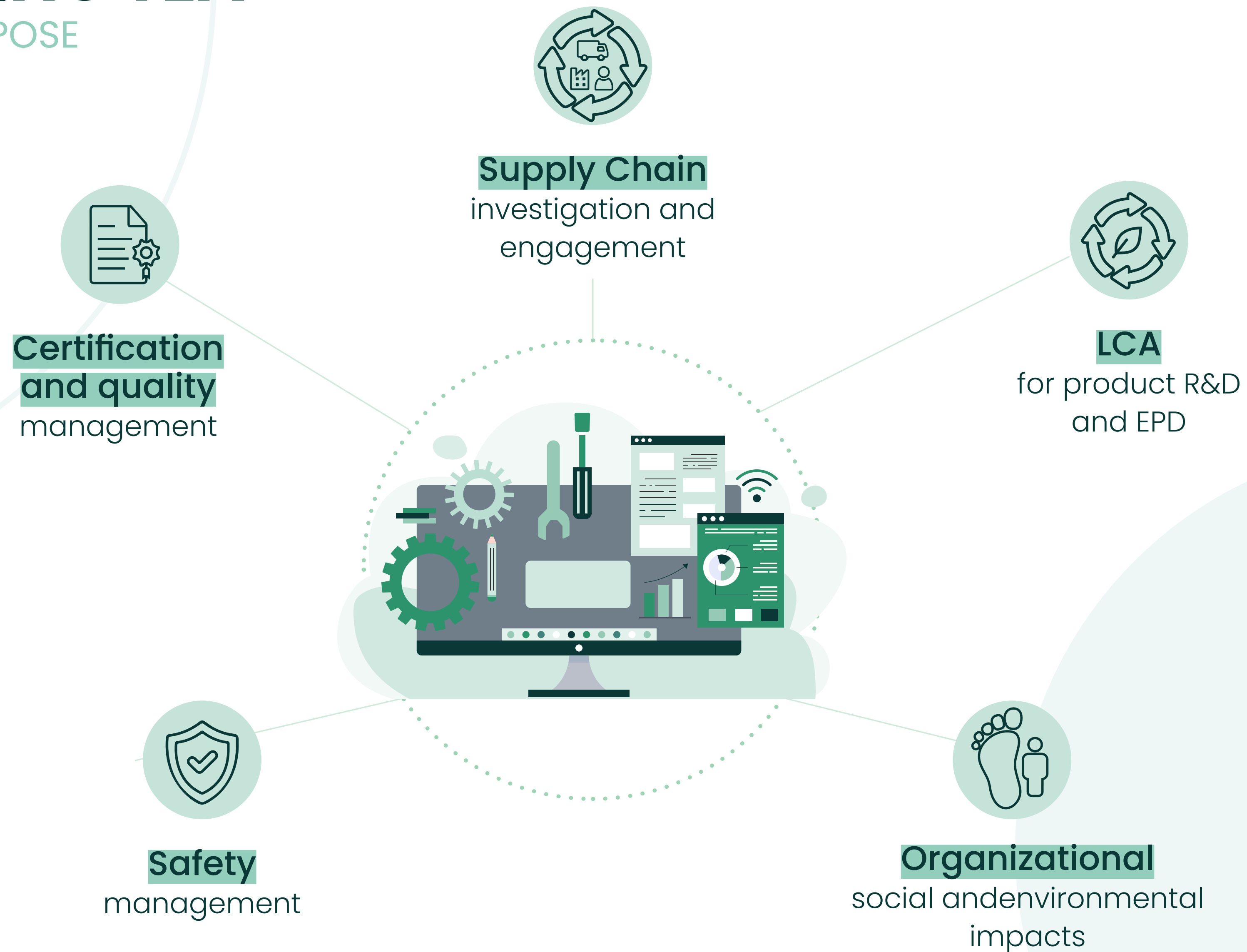
Suitable for a **less expert user** with  
basic knowledge of processes  
and products (e.g. sales)



# INTRODUCING TEA®

THE TOOLS WE PROPOSE

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Several ISO 14040-14044 compliant LCA studies have been developed as starting point for the Excel tool design and deployment.

## REPI ITALIA

## Italy

## Italy

- Calculation of LCA results.
- Simulations available for different BOM options, packaging, etc.

## BOM impacts, cradle-to-gate with options



## LCA Tool

www.lcengineering.eu

# EXCEL BASED TOOL

AT WORK



Design and assembly of electromechanical equipment

- CUSTOMER

PLANTS

COUNTRIES

FEATURES/KPI

OUTPUT
- COL GROUP

3 with the possibility of adding others in case of acquisitions

Italy, USA

Calculation of LCA results for internal R&D purposes

- LCA
  - EPD



LCA Tool

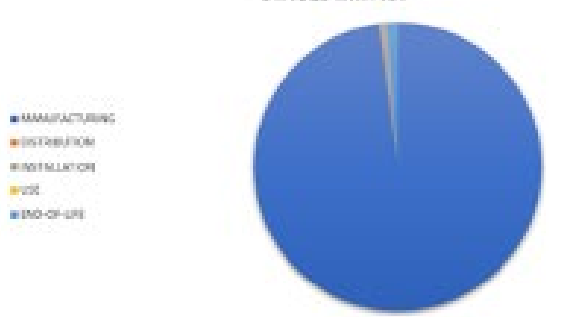
CALCULATION OF LCA RESULTS  
SUITABLE FOR EPD GENERATIONS

IMPACT CATEGORY	Unit of Measure	ALLOCATED PLANT	CALCULATION STEP										END-OF-LIFE
			BOM-Structural Raw	BOM-Structural	BOM-Electrical Raw	BOM-Electrical Transport	BOM-Packaging Raw	BOM-Packaging	BOM-Electrical Transport	BOM-Packaging	BOM-Electrical Transport	BOM-Packaging	
Climate change - Total	kg CO <sub>2</sub> eq	0.00E+00	1.17E+04	2.44E+01	4.73E+03	2.47E+01	2.89E+03	2.45E+01	1.50E+03	0.00E+00	1.92E+02	1.92E+02	
Climate change - Fossil	kg CO <sub>2</sub> eq	0.00E+00	1.16E+04	2.44E+01	4.70E+03	2.47E+01	2.88E+03	2.45E+01	1.50E+03	0.00E+00	1.92E+02	1.92E+02	
Climate change - Biogenic standard	kg CO <sub>2</sub> eq	0.00E+00	2.46E+01	1.52E+01	1.17E+01	1.45E+01	6.51E+01	1.39E+01	1.07E+01	0.00E+00	7.89E+01	7.89E+01	
Climate change - Biogenic stored	kg CO <sub>2</sub> eq	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Climate change - Land use and UJ change	kg CO <sub>2</sub> eq	0.00E+00	1.69E+01	3.38E+04	3.09E+00	3.10E+04	2.49E+01	3.03E+04	1.17E+04	9.16E+04	0.00E+00	7.38E+02	
Climate change - GWP GHG	kg CO <sub>2</sub> eq	0.00E+00	1.14E+04	2.48E+01	4.58E+03	2.48E+01	2.76E+03	2.43E+01	1.44E+03	1.50E+03	0.00E+00	1.93E+02	
Drone depletion	kg CFC11 eq	0.00E+00	7.66E+04	5.97E+06	3.16E+04	5.48E+06	6.88E+06	5.42E+06	3.43E+06	5.03E+07	0.00E+00	1.13E+06	
Acidification	mol H+ eq	0.00E+00	5.23E+01	5.50E+01	3.66E+01	5.05E+01	1.16E+02	5.00E+01	5.02E+02	1.60E+02	0.00E+00	9.98E+02	
Eutrophication, freshwater	kg P eq	0.00E+00	5.63E+01	1.46E+05	3.93E+01	1.34E+05	8.83E+03	1.32E+05	7.40E+06	2.90E+05	0.00E+00	5.17E+04	
Eutrophication, marine	kg N eq	0.00E+00	1.24E+01	1.10E+01	5.47E+00	1.27E+01	2.17E+01	1.25E+01	3.61E+02	1.78E+02	0.00E+00	3.47E+02	
Eutrophication, terrestrial	mol N eq	0.00E+00	9.73E+01	1.54E+01	6.14E+01	1.41E+01	2.36E+01	1.45E+01	1.77E+01	1.72E+01	0.00E+00	3.59E+01	
Photochemical ozone formation	kg NMVOC eq	0.00E+00	5.43E+01	3.44E+01	2.61E+01	3.62E+01	1.13E+02	3.58E+01	4.83E+02	4.20E+02	0.00E+00	8.90E+02	
Resource use, minerals and metals	kg Sb eq	0.00E+00	1.26E+03	6.92E+07	8.73E+01	6.35E+07	4.34E+05	6.29E+07	6.28E+07	2.80E+06	0.00E+00	2.82E+06	
Resource use, fossils	MJ	0.00E+00	1.55E+05	3.63E+02	6.10E+04	3.11E+02	8.37E+03	3.30E+02	2.05E+02	1.67E+01	0.00E+00	1.84E+02	
Water use	m³ depvt.	0.00E+00	4.08E+03	4.32E+02	4.32E+02	5.83E+01	2.31E+02	3.53E+02	6.88E+00	0.00E+00	0.00E+00	4.41E+00	
Particulate matter	kg dust eq	0.00E+00	4.26E+04	1.75E+05	2.70E+04	1.15E+05	1.01E+05	1.15E+05	1.08E+06	7.07E+07	0.00E+00	7.21E+07	
Ionising radiation	kg U-235 eq	0.00E+00	5.27E+02	1.58E+00	2.27E+02	1.45E+00	9.79E+00	1.44E+00	8.90E+01	9.32E+02	0.00E+00	7.26E+01	
Eutrophicity, freshwater	CTPh	0.00E+00	2.10E+05	1.31E+02	3.06E+05	1.15E+02	2.26E+03	1.15E+02	8.31E+01	3.07E+02	0.00E+00	1.15E+03	
Human toxicity, cancer	CTPh	0.00E+00	4.59E+06	3.18E+09	7.94E+06	3.10E+09	4.97E+08	3.07E+09	1.17E+09	1.21E+08	0.00E+00	2.84E+08	
Human toxicity, non-cancer	CTPh	0.00E+00	1.45E+04	1.65E+07	2.24E+04	1.51E+07	1.46E+07	1.50E+07	1.36E+07	5.04E+07	0.00E+00	4.64E+06	
Land use	Pa	0.00E+00	1.37E+04	9.61E+01	2.10E+04	8.82E+01	7.20E+02	8.73E+01	5.51E+01	5.04E+00	0.00E+00	1.99E+01	
Primary renewable energy (carrier)	MJ	0.00E+00	1.40E+04	5.18E+01	6.30E+03	4.76E+01	3.25E+02	4.71E+01	3.14E+01	8.56E+01	0.00E+00	1.39E+01	
Primary renewable energy (feedstock)	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Primary renewable energy (total)	MJ	0.00E+00	1.40E+04	5.18E+01	6.30E+03	4.76E+01	3.25E+02	4.71E+01	3.14E+01	8.56E+01	0.00E+00	1.39E+01	
Primary non-renewable energy (carrier)	MJ	0.00E+00	1.55E+05	3.55E+02	7.33E+04	3.10E+02	4.27E+03	3.23E+02	2.05E+02	4.01E+01	0.00E+00	2.21E+02	
Primary non-renewable energy (feedstock)	MJ	0.00E+00	0.00E+00	0.00E+00	4.34E+03	0.00E+00	4.80E+03	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Primary non-renewable energy (total)	MJ	0.00E+00	1.55E+05	3.55E+02	7.37E+04	3.10E+02	4.30E+03	3.23E+02	2.05E+02	4.01E+01	0.00E+00	2.21E+02	
Secondary materials	kg	0.00E+00	5.63E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Non-renewable secondary fuels	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Net use of fresh water (EIS-6)	m³	0.00E+00	1.45E+02	1.23E+03	5.19E+01	1.11E+03	5.45E+00	1.10E+03	5.62E+04	2.16E+01	0.00E+00	1.66E+01	
Hazardous waste disposed	kg	0.00E+00	6.15E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Non hazardous waste disposed	kg	0.00E+00	5.14E+01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.00E+01	0.00E+00	2.00E+01	
Radioactive waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Materials for recycling	kg	0.00E+00	6.77E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.80E+01	0.00E+00	1.80E+02	
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	6.04E+01	0.00E+00	0.00E+00	
Exported Thermal Energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
Exported Electricity Energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	

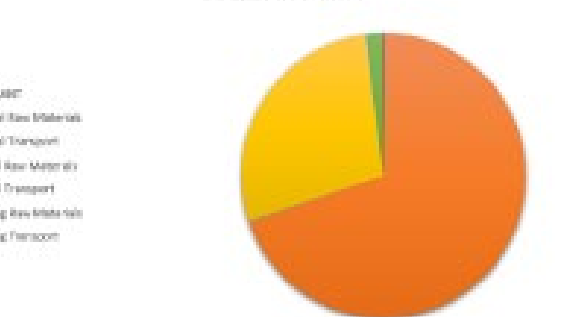
MANUFACTURING	DISTRIBUTION	INSTALLATION	USE	END-OF-LIFE	TOTAL
1.08E+04	1.45E+01	1.50E+02	0.00E+00	1.92E+02	1.71E+04
97.93%	0.08%	0.88%	0.00%	1.12%	

ALLOCATED PLANT	BOM-Structural Raw Materials	BOM-Structural Transport	BOM-Electrical Raw Materials	BOM-Electrical Transport	BOM-Packaging Raw Materials	BOM-Packaging Transport
0.00E+00	1.17E+04	2.69E+01	4.72E+03	2.47E+01	2.89E+02	2.45E+01
0%	69.89%	0.16%	28.18%	0.15%	1.72%	0.15%

CLIMATE CHANGE - TOTAL (kg CO<sub>2</sub> eq) - LIFE CYCLE  
STAGES IMPACT



CLIMATE CHANGE - TOTAL (kg CO<sub>2</sub> eq) - MANUFACTURING  
STAGES IMPACT





# EXCEL BASED TOOL

AT WORK



Purchase and resale of steel pipes mainly for structural and oil & gas uses

CUSTOMER	CTA
PLANTS	5 with the possibility of adding others in case of acquisitions
COUNTRIES	worldwide
OUTPUT	CFO



LCA Tool

ORGANISATION CARBON FOOTPRINT BY GHG PROTOCOL





# WEB BASED TOOL AT WORK

HORIZON 2020



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N. 678875



**AmbliFibre** will develop and validate the first intelligent model-based controlled laser-assisted tape winding system for fibre-reinforced thermoplastic (FRP) components. The successful application of the AmbliFibre results will dramatically accelerate the replacement of metal components in these domains, reducing the carbon footprint thanks to the low weight and long life cycle of FRP components and provide new opportunities for European manufacturers. [www.amblifibre.eu](http://www.amblifibre.eu)

AMBLIFIBRE H2020 N.678875

PERIOD: 2015-2018

**USERS** Project's CONSORTIUM


**COUNTRIES** Europe

- DEVELOPMENT**
- Data collection for LCA
  - Guided LCA model assembly
  - Impact indicators calculation




LCA Tool





LCE Admin

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 678875



HomeData EntryReportUser management

Documents management

Calculate

V	Project	Company	User	Document name	Description	Status	View	Edit	
<input type="checkbox"/>	Filter search by 'Project'	Filter search by 'Company'	Filter search by 'User'	Filter search by 'Document name'	Filter search by 'Description'	*			
<input type="checkbox"/>	Product group 1 - Flexible pipe		test_LCE	Test		OPEN			
<input type="checkbox"/>	Product group 1 - Flexible pipe		test_LCE	Test		OPEN			
<input type="checkbox"/>	Product group 1 - Flexible pipe	Fraunhofer Institute	Administrator	test for guest		CLOSED			

Logout

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Version 1.0.1 - 02/03/2017

Contact Administrator

Credits Informatica Vision



# WEB BASED TOOL AT WORK

HORIZON 2020



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N. 678875



**RESLAG** project aims to turn waste from steel industry into a valuable low cost feedstock for energy intensive industry. Thi project seeks to develop an innovative organizational steel by-products management model, based on a life cycle perspective, which is able to reach high levels of resource and energy efficiency. The project will demonstrate that there are industrial sectors able to valorize steel slag that are currently landfilled, if properly supported by the right technologies. To this aim, four innovative applications for recycling steel slag will be developed and tested on large-scale demonstrations. [dev.enzimdigital.com/reslag/](http://dev.enzimdigital.com/reslag/)

## RESLAG H2020 N.642067

PERIOD: 2015-2019

### USERS

Project's CONSORTIUM

### COUNTRIES

Europe

### DEVELOPMENT

- Data collection for LCA
- Guided LCA model assembly
- Impact indicators calculation



LCA Tool



Funded by the European Union's H2020 Programme Waste-1-2014. GA - 642067

LCE Admin

HomeData ManagementReportUser managementUsers logProfile

Open new document

+ New document

Download users manual

REslag user manual

Pilot document 4

Pilot	Document name	View
Pilot 3B	Slag waste as feedstock for Concentrated Solar Power applications (molten salts as HTF)	
Pilot 3B	Slag waste as feedstock for Concentrated Solar Power applications (molten salts as HTF)	
Pilot 4	Slag waste as feedstock for innovative refractory ceramics	
Pilot 4	Slag waste as feedstock for innovative refractory ceramics	

Documents

Pilot	Document name	Period	Status	View	Edit	Delete	
Pilot 1	Slag waste as feedstock for critical metals extraction	09/06/2017 - 09/07/2017	OPEN				
Pilot 2	Slag waste as feedstock for heat recovery applications	15/05/2017 - 23/05/2017	SENT				
Pilot 4	Slag waste as feedstock for innovative refractory ceramics	22/05/2017 - 28/05/2018	CLOSED				
Pilot 4	Slag waste as feedstock for innovative refractory ceramics	22/05/2017 - 23/05/2017	CLOSED				
Pilot 3B	Slag waste as feedstock for Concentrated Solar Power applications (molten salts as HTF)	29/04/2017 - 31/05/2017	CLOSED				
Pilot 3B	Slag waste as feedstock for Concentrated Solar Power applications (molten salts as HTF)	28/04/2017 - 30/04/2017	CLOSED				

Logout

© Property of Life Cycle Engineering

Version 1.0.2 test - 25/05/2017

Contact Administrator

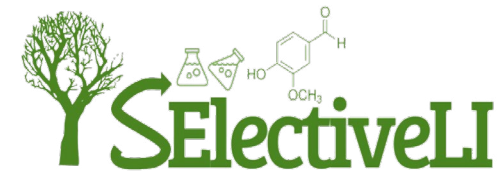
Credits Informatica Vision





# WEB BASED TOOL AT WORK

HORIZON 2020



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N. 678875

**SElectiveLI** is an European project, funded by the BBI JU under the Horizon 2020 program. The project's aim is to provide proof of concept of the potential for converting low cost lignosulfonate feedstock into high value bio-sustainable chemicals through the development and optimization of electrochemical processes and downstream separation and purification.

**SELECTIVELI H2020 N. 837276**

PERIOD: 2019-2023

## USERS

Project's CONSORTIUM

## COUNTRIES

Europe

## DEVELOPMENT

- Data collection for LCA studies
- Guided LCA model assembly
- Impact indicators calculation
- R&D simulations



LCA Tool





# WEB BASED TOOL AT WORK

## HORIZON 2020

© LCE - Edition 2024



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N. 678875



**EFFECTIVE** is an European project, funded by the BBI JU under the Horizon 2020 program, and a multi-company collaboration. The project's overarching objective is to demonstrate innovative and economically viable routes for the production of bio-based polyamides and polyesters from renewable feedstocks to obtain fibres and films with enhanced properties, market competitiveness and increased sustainability.

[www.effective-project.eu](http://www.effective-project.eu)

### EFFECTIVE H2020 N. 792195

PERIOD: 2018-2022

#### USERS

Project's CONSORTIUM

#### COUNTRIES

Europe and USA

#### DEVELOPMENT

- Data collection for LCA/LCC and S-LCA studies
- Guided LCA model assembly
- Impact indicators calculation



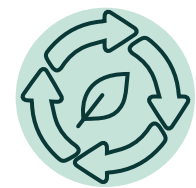


# WEB BASED TOOL AT WORK

## GROWING RESILIENCE AGRICULTURE



With the contribution of the LIFE  
financial instrument of the European community



TOOL



**GREAT** is the European project led by the Department of Agro-Alimentary Sciences and Technologies, of the University of Bologna.  
From agricultural production, to processing, to consumers, the goal is to experiment with new resilient crops in order to reduce climate change impact on agricultural activities in the Po Valley, as well as in Italy as a whole, thereby helping to sustain farmers' income, reducing water consumption and producing quality foods for the final market. <https://great-life.eu/>

<b>USERS</b>	Project's CONSORTIUM (LCE, University of Bologna, Alce Nero, Kilowatt, Cento Municipality)
<b>COUNTRIES</b>	Italy, with possible future developments and use in other European countries
<b>DEVELOPMENT</b>	<ul style="list-style-type: none"><li>• data collection for LCA/LCC analysis</li><li>• Impact indicators calculation and reporting</li></ul>





# WEB BASED TOOL AT WORK

## GLASS RECYCLING FOR SANITARYWARE



With the contribution of the LIFE  
financial instrument of the European community

**Sanitser** is a European project that aims to revise the production process in the Vitreous Sanitary Ware (VSW) ceramic sector by introducing relevant amounts of glass cullet waste from urban waste disposal in the ceramic blends formulations.

The project focuses process innovations designed to:

- a) provide a sustainable management, in terms of recovery of large amounts of glass cullet waste (soda lime glass: SLG);
- b) improve environmental performances of the ceramic sector by reducing CO<sub>2</sub> emissions;
- c) enhance sustainability by energy saving and natural resources preservation.

[www.sanitser.eu](http://www.sanitser.eu)

### USERS

Project's CONSORTIUM

### COUNTRIES

Europe

### DEVELOPMENT

- Data elaboration for LCA/LCC & SLCA studies
- Impact indicators for EPD purposes
- R&D simulations



TOOL



With the contribution of the LIFE  
financial instrument of the European community

[Home](#) [Create sanitary ware](#) [Report](#) [User management](#)

**Report Sanitary phase**

Search parameters setting

Sanitaries

Sanitario tradizionale

Indicators

[GWP] Carbon Footprint (IPCC 2013) (kgCO2eq / kg)

+ Execute report

Phases	Sanitario tradizionale
Slip	0,014
Glaze	0,522
Pilot plant	4,971
Sanitary Total	5,507

# WEB BASED TOOL AT WORK

FOOD



**Barilla** is one of today’s top Italian food groups. Barilla leads in the global pasta business, the pasta sauces business in continental Europe, the bakery products business in Italy and the crispbread business in Scandinavia. The Group exports to more than 100 countries, delivering every year about 1,700,000 tons of food products, with the brands Barilla, Mulino Bianco, Voiello, Pavesi, Academia Barilla, Wasa, Harry’s (France and Russia), Misko (Greece), Filiz (Turkey), Yemina and Vesta (Mexico).

[www.barillagroup.com](http://www.barillagroup.com)

CUSTOMER	BARILLA
PLANTS	26
COUNTRIES	France, Greece, Italy, Mexico, Russia, Sweden, Turkey, USA
FEATURES/KPI	CSR reporting
OUTPUT	CSR indicators at company and plant level



CSR Tool /  
deadline management

Barilla CSR

Home

Questionnaires

Report

Messages 79

Timetable

Users

Tools

Profile

Log-out

Welcome, LceStudio Amministratore

Documents and References

User manual

Factors Issue

Reference Contacts

Laura

filaret

SUSTAINABILITY REPORTS

CSR 2009

CSR 2010

CSR 2011

CSR 2013

CSR 2014

CSR 2015

CSR 2016

Introduction to the web tool

Welcome to the CSR Tool management panell

Here you can view and manage all the plants' questionnaires, monitor the annual progress reports, and edit information related to users and plants recorded in the database.

Questionnaire status

Year 2015

Legend

N/A

WORKING

VALIDATE

COMPLETE

Plant

ALTAMURA

AMES

AS

MAY

JUN

JUL

AUG

SEP

OCT

NOV

DEC

YEARLY

LUCA RUINI

Global HSE Director Barilla SpA

"Thanks to TEA we save a lot of time every month to collect energy and environmental data by sites worldwide, to elaborate efficiency and productivity indicators. By using EPDs, marketing is really satisfied as well Easy to use, recommended to multi-sites companies."





# WEB BASED TOOL AT WORK

FOOD



.....

CUSTOMER	BARILLA
USERS	Nutrition Team, HSE&E Team, Academia Barilla's Chefs, Barilla Restaurant's Chefs
COUNTRIES	Italy, USA
FEATURES/KPI	Nutritional and Environmental Values of Dishes and Menus
OUTPUT	EU and US Nutrizional Labels for Dishes and Menus Carbon, Water and Ecological Footprint for Dishes and Menus



TOOL Chef

Barilla Chef

HOME

DISHES

GROUPS

MENU

DATABASE

USERS

TOOLS

LCE SuperAdmin

VIEW PROFILE

LOG OUT

All Dishes

View and manage your dishes

+ Add Dish

+ Add Semifinished prod.

total dishes 3

Search dish

Q Search

Advanced search

Fusilli Napoletana with fresh aromatic herbs

Redavid Elisabetta • Academia Barilla

03/05/2017

219 g

Report

Penne with fresh Mediterranean vegetables and aromatic herbs

Redavid Elisabetta • Academia Barilla

03/05/2017

325 g

Report

Spaghetti Bio with eggplant, thyme and goat cheese

Redavid Elisabetta • Academia Barilla

03/05/2017

262 g

Report

Dishes options

Dish order

Name A -> Z

Name Z -> A

Newest

Oldest

View option

View personal

View dish by Academia Barilla

View dish by Barilla Restaurants New York

View dish by Nutrition team

View all

View type

First course

Second course

Side dish

Single course

Dessert

Semifinished products

barilasso.com © Property of Barilla G. e R.

Powered by Life Cycle Engineering

Designed and built by Informatica Vision

Version 1.0.4 - 07/06/2017





# WEB BASED TOOL AT WORK

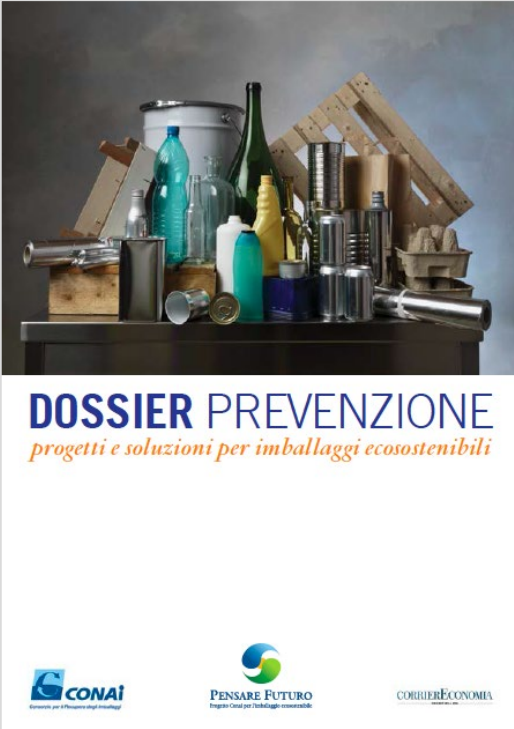
## PACKAGING



The Italian National Packaging Consortium (CONAI) has the scope to recovery and recycling the packaging in Italy, coordinating the work of the six italian consortia of materials: steel (Ricrea), aluminium (Cial), paper and paperboard (Comieco), wood (Rilegno), plastics (Corepla), and glass (Coreve). With **more than 1M** member companies, CONAI is one of the largest systems in Europe. CONAI adopts TEA to evaluate the eco-compatibility of new packaging solutions of its member companies. CONAI promotes the adoption of eco-sustainable packaging at source. [www.conai.org](http://www.conai.org)

CUSTOMER	CONAI
USERS	CONAI member companies (associates) >1M
DEVELOPMENT	Evaluation of eco-design solutions
FEATURES/KPI	Comprehensive DB by materials and processes Possibility to use plant (primary) data
OUTPUT	Variation of the three selected impact indicators (carbon, water, energy) former vs new solution

DOSSIER PREVENTION 2013



FUTURO COMUNE 2016



### ECO DESIGN Tool

**Imballaggio DOPO**

Tipo di prodotto: Bevande  
Nome commerciale prodotto: Acqua Brivia  
Formato: 1.5 Litri

**Distinta base**

Imballaggio Primario

Vetro : Vetro trasparente - Fonte: LCE

Tipologia imballaggio	Peso [g]	% Riciclato	Processo produttivo	N. Riutilizzi
Bottiglie	120	90	Fusione Vetro	0

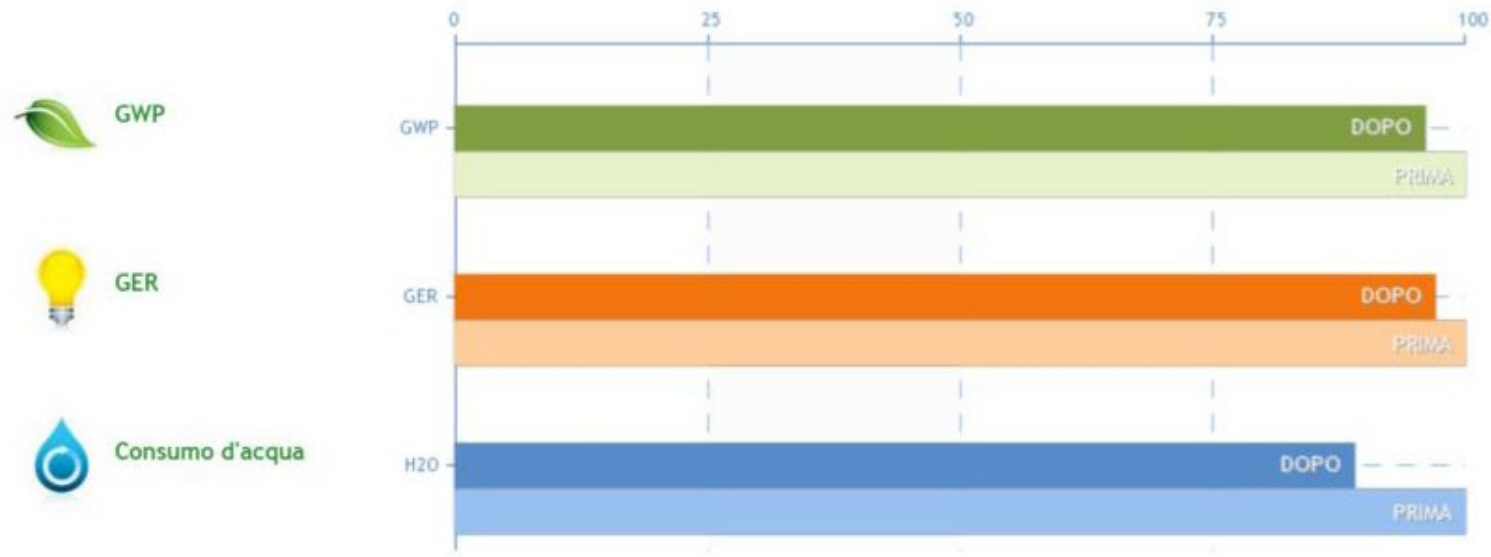
Carta : Carta - Fonte: LCE

Tipologia imballaggio	Peso [g]	% Riciclato	Processo produttivo	N. Riutilizzi
Etichetta	2.5	0	Cartotecnica	0

Acciaio : Banda stagnata - Fonte: World Steel Association

Tipologia imballaggio	Peso [g]	% Riciclato	Processo produttivo	N. Riutilizzi
Tappi corona	3	0	Stampaggio acciaio	0

### Risultati





# WEB BASED TOOL AT WORK

## BUILDING & CONSTRUCTION



The **European Waterproofing Association** (EWA) was created to provide an authoritative voice for the Bitumen roofing and waterproofing membrane manufacturing industry across Europe. The EWA is Europe’s central source of advice and information on all Bitumen membrane roofing and waterproofing matters, both to the industry and to its user groups.

[www.bwa-europe.com](http://www.bwa-europe.com)

CUSTOMER	European Waterproofing Association
USERS	EWA member companies (associated) >30
COUNTRIES	Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Norway, Spain and Sweden
FEATURES/KPI	Collection and data elaboration for the pan-European Environmental Product Declaration (First certified EPD for a trade association) Plant user R&D elaboration
OUTPUT	24 impact indicators based on the EN 15804 standard



LCA Tool



IndicatorName	udm	A1	A2	A3	A4	TotalImpact
ODP	kgCFC11	1.08E-08	3.19E-09	1.43E-10	0.00E00	1.42E-08
AP	KgSO2	1.28E-03	1.01E-04	2.52E-05	0.00E00	1.41E-03
POCP	KgC2H4	4.26E-04	1.53E-05	4.50E-06	0.00E00	4.46E-04
EP	KgPO43	1.22E-04	2.32E-05	6.66E-06	0.00E00	1.52E-04
ADPForNFR	kgSbeq	2.55E-09	1.34E-11	3.60E-11	0.00E00	2.60E-09
ADPForFR	kgOileq	5.35E01	3.01E-01	1.88E-02	0.00E00	5.38E01
Exported_Energy	MJ	0.00E00	0.00E00	0.00E00	0.00E00	0.00E00
REN_Feedstock	MJ	0.00E00	0.00E00	0.00E00	0.00E00	0.00E00

IndicatorName	udm	A5
GWP100	KgCO2eq	-4.61E-
ODP	kgCFC11	-4.42E-
AP	KgSO2	-1.02E-
POCP	KgC2H4	-1.27E-
EP	KgPO43	-1.35E-
ADPForNFR	kgSbeq	-5.29E-
ADPForFR	kgOileq	-6.86E-
Exported_Energy	MJ	5.12E-0





# LCA/GHG/CSR Tool

[www.gualaclosures.com](http://www.gualaclosures.com)

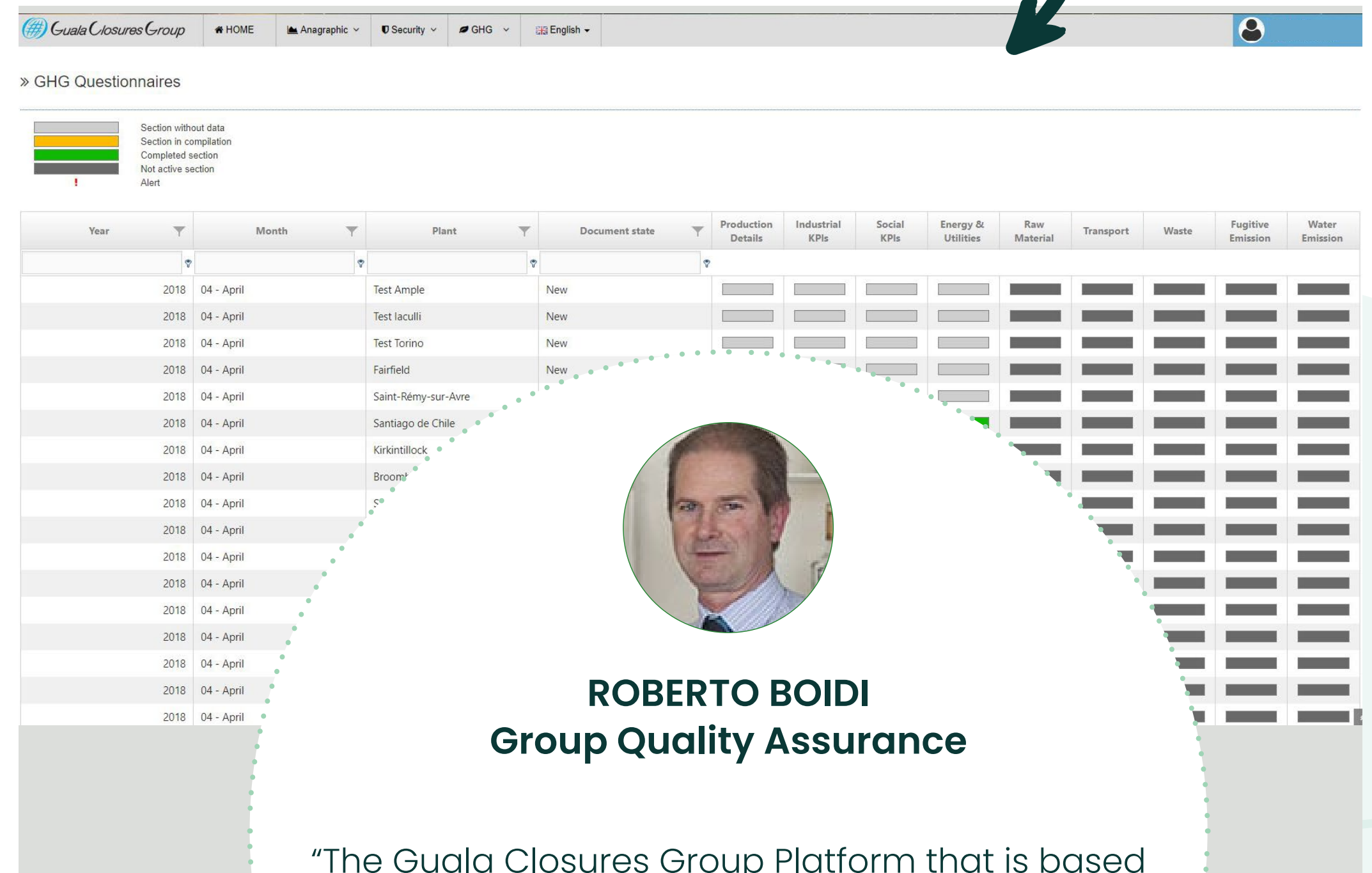
## Guala Closures Group

29

Argentina, Australia, Brazil, Bulgaria, Chile, China, Colombia, France, India, Italy, Mexico, New Zealand, Poland, South, Africa, Spain, Ukraine, United Kingdom, USA

Comprehensive DB by materials and processes  
Possibility to use plant (primary) data

LCI data from 25 plants over 5 continents. LCA for different closures



**ROBERTO BOLDI**  
**Group Quality Assurance**

“The Guala Closures Group Platform that is based on TEA approach and logic is very useful to collect environmental life-cycle data among our plants World Wide and to maintain updated our LCA/GHG Reporting”.



# WEB BASED TOOL AT WORK

## YARNS AND TEXTILES



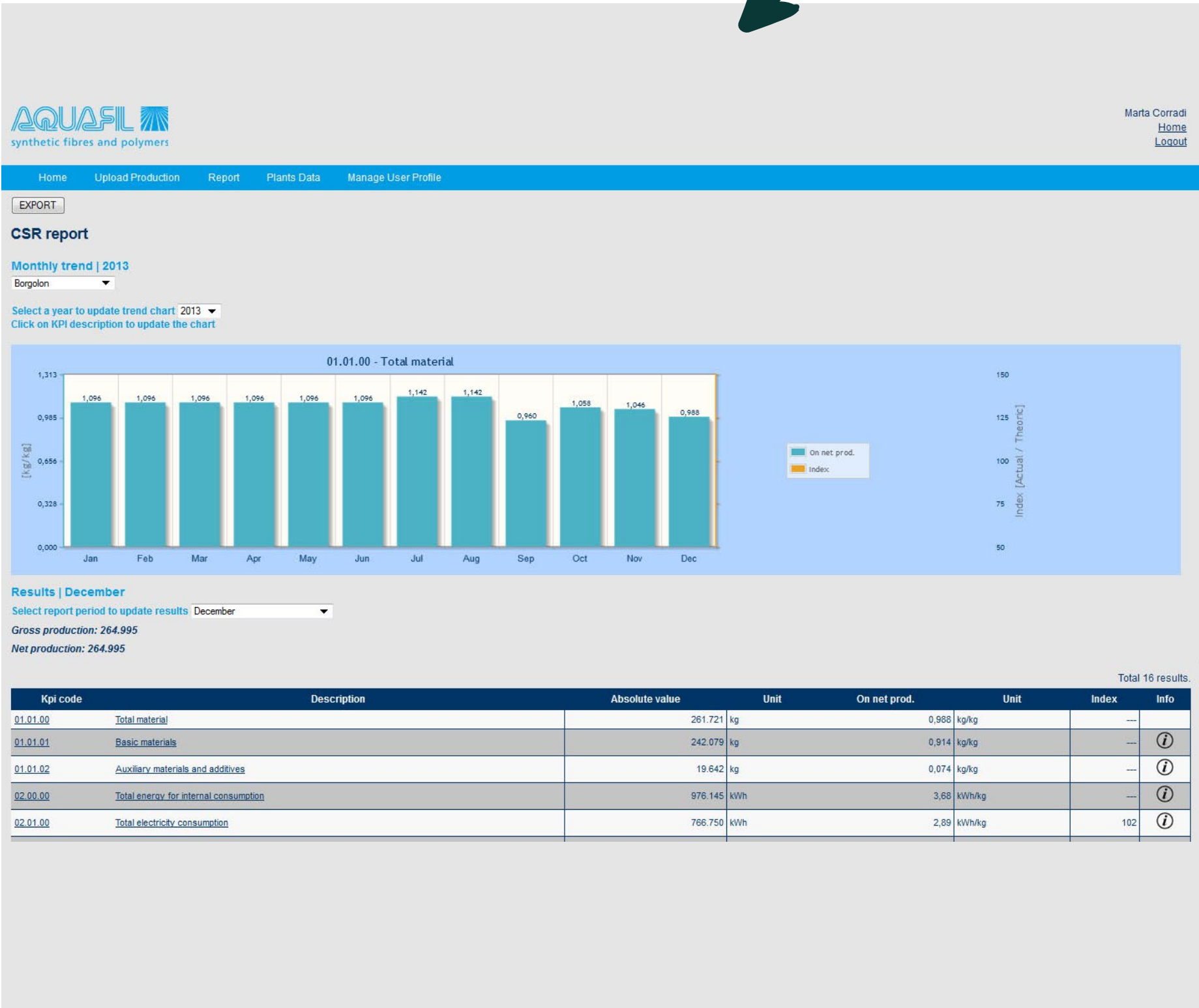
For almost 50 years Aquafil has been generating and distributing value in the Nylon 6 market, by developing manufacturing processes and producing innovative products with the best environmental performance. Aquafil has always been committed to taking concrete actions to protect the environment and aims to maintain its leadership in the sector by implementing an innovative resource-efficient business model that delivers quality products while safeguarding the environment and yielding value for all those involved in the business activities. ECONYL® regenerated nylon is a product of Aquafil.

www.aquafil.com - www.econyl.com

CUSTOMER	Aquafil
USERS	R&D, HSE Manager, Quality assurance, Plant manager
PLANTS	15
COUNTRIES	China, Croatia, Germany, Italy, Slovenia, Thailand, UK, USA
OUTPUT	Environmental burden, including carbon footprint KPI report for CSR analysis



CSR Tool



# WEB BASED TOOL AT WORK

FOOD



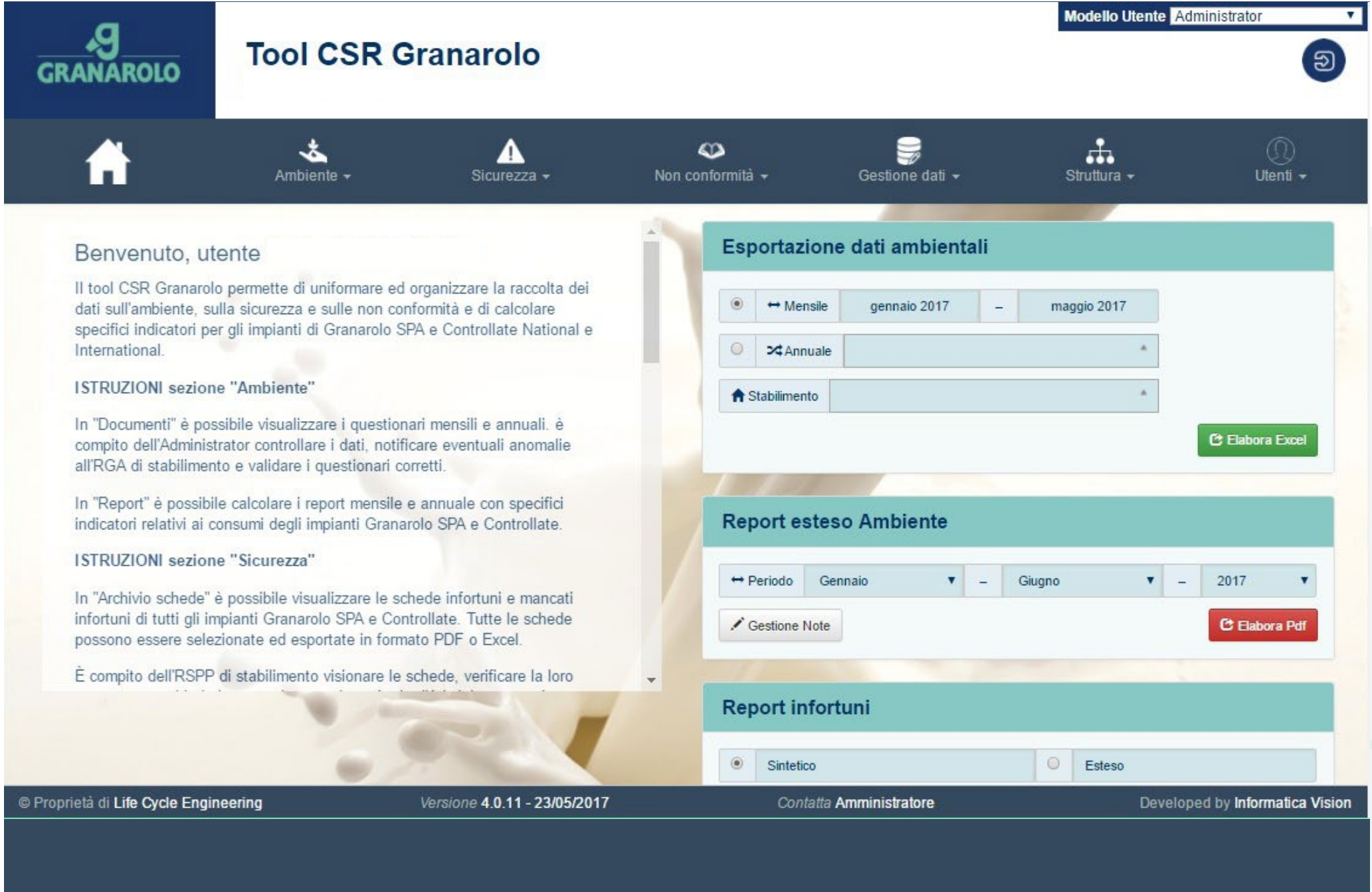
The **Granarolo Group** is one of the first Italian owned agro-industrial group in the country and the largest Italian milk supply chain directly owned by producers operating as a co-operative. Granarolo comprises a consortium of milk producers – Granlatte – which operates in the agricultural sector and collects raw milk – and a joint-stock company – Granarolo S.p.A. – which processes and sells the finished product, with 18 production sites throuth the country and 7 abroad.

[www.granarolo.com](http://www.granarolo.com)

CUSTOMER	Granarolo
USERS	HSE Manager, Plant Manager
PLANTS	+15
COUNTRIES	Italy
OUTPUT	KPI report for CSR analysis Track accidents, near-accidents and occupational diseases Report on safety at work Report on NC management



CSR/SAFETY at WORK / NC  
MANAGEMENT Tool





# WEB BASED TOOL AT WORK

FOOD



CUSTOMER	Granarolo
USERS	R&D, HSE Manager, marketing
FEATURES/KPI	Extensive DB with materials and processes
OUTPUT	LCA indicators to benchmark different solutions

TOOL PACK

# WEB BASED TOOL AT WORK

## FASHION

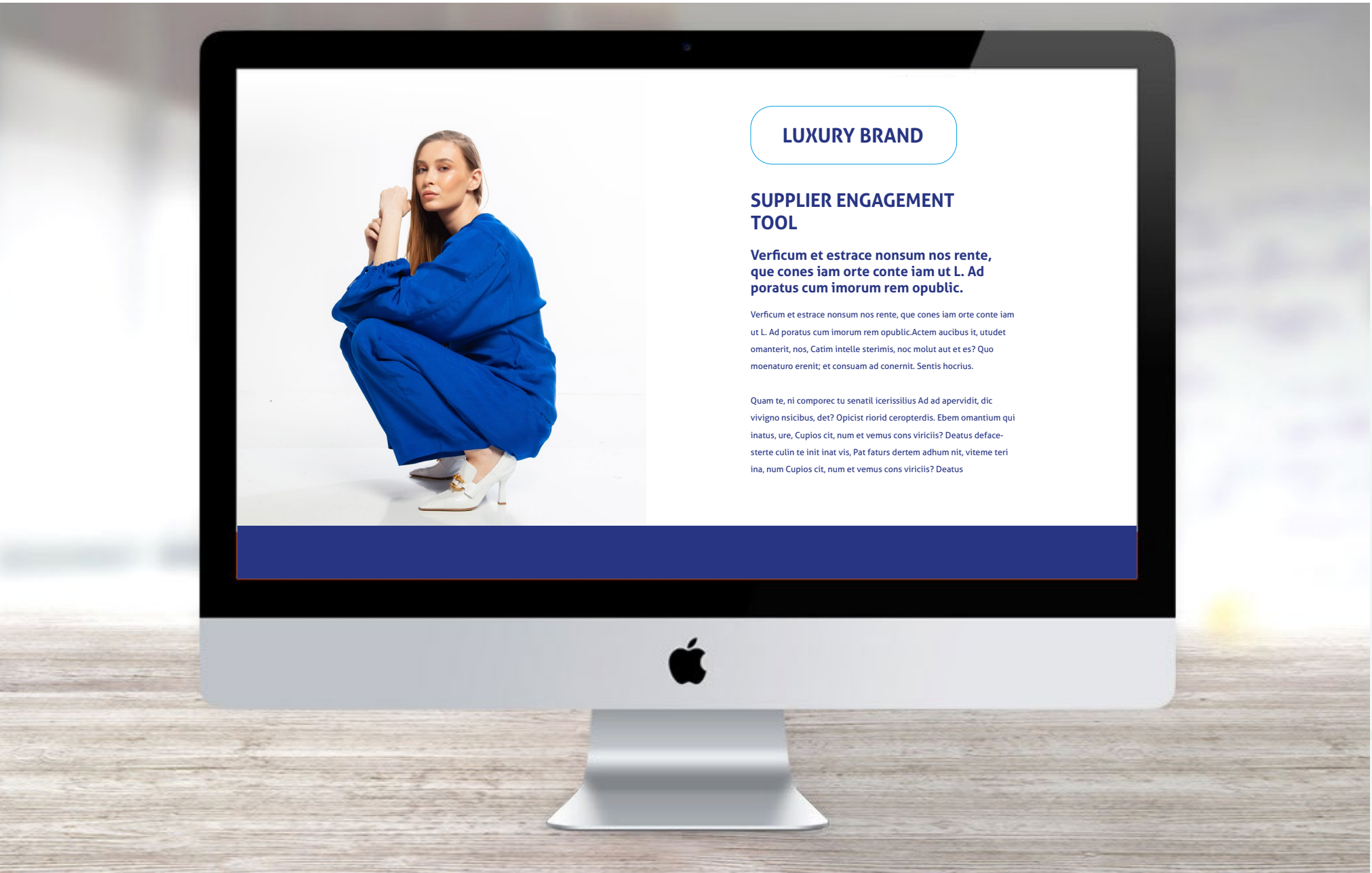


### SUPPLIER ENGAGEMENT Tool



Web-tool developed for one of the most famous Italian Luxury brand. Its aim is to support the supplier engagement and the qualification process.

CUSTOMER	LUXURY ITALIAN BRAND
USERS	Suppliers (>500)
COUNTRIES	All over the world
DEVELOPMENT	Suppliers map Self-assessment on environmental, social and health and safety issues.
OUTPUT	Supplier qualification report





# WEB BASED TOOL AT WORK

## BUILDING & CONSTRUCTION



**European General Galvanizers Association** (EGGA) is the industry organisation for Europe’s general galvanizing sector, representing about 600 general galvanizing plants in Europe. EGGA monitors and responds to issues affecting the general galvanizing industry in Europe, in particular environmental, technical and regulatory matters. EGGA also provides a platform for coordination of marketing and other initiatives for the industry. [www.egga.com](http://www.egga.com)

CUSTOMER	EGGA
USERS	EGGA member companies (associates) >50
COUNTRIES	Europe
DEVELOPMENT	LCA Reporting R&D elaboration



LCI Tool



EGGA LCI data collection

Guest Egga Guest Logout

HomeLCI data collection

Data collection Questionnaire - Plant UK Questionnaire - Plant UK

Inventory

Pre & post treatment stage

Zinc kettle #1

Energy

Back

Forward

Emissions

Waste

Degreasing and combined degreasing / pickling solutions

Pickling

Flux

Post treatment & passivation

Water consumption at any stage

Substances

Annual Consumption

Average concentration

Substances

Annual Consumption

Average concentration

Substances

Annual Consumption

Average concentration

Substances

Annual Consumption

Average concentration

Substances

Annual Consumption

Close

# WEB BASED TOOL AT WORK

## RAIL TRANSPORT



**Hitachi Rail Italy** is specialized in the manufacture of technologically advanced rolling stock. Created by the evolution of AnsaldoBreda, the most important Italian brand with more than 160 years of history in the rail and metro sector, Hitachi Rail Italy has a wide range of products, ranging from high speed to driverless metros. In the segment of local public transport Hitachi Rail Italy is the world leader for the driverless metros, holding about the 30% of the world market. [italy.hitachirail.com](http://italy.hitachirail.com)

CUSTOMER	Hitachi rail italy
USERS	Designers, HSE manager, ISO 14001 manager, R&D, suppliers
COUNTRIES	Europe, USA
OUTPUT	Data elaboration for LCA studies Impact indicators for EPD purposes R&D simulations R&D elaboration



LCA Tool



HOME

DATA COLLECTION

RAMS CONFIGURATIONS

REPORT

TOOLS

HRI USER MANAGEMENT

Welcome to the brand new web tool for products' energy and environmental data collection and management.

Scope of the tool is to facilitate, centralize and standardize Life Cycle Assessment (LCA) data in order to calculate products' environmental impacts in a reliable and faster way.

A smart reporting will provide a clear support for LCA results analysis and improvements' design and simulation.

View the [Hitachi web tool manual](#).

PROJECT CREW

Please select a project to view the crew

PROJECT MANAGEMENT

+ OPEN NEW PROJECT

S	PROJECT	START DATE	END DATE	STATUS	VIEW	CREW	CLOSE PRJ	EXPORT
<input type="checkbox"/>	Miami Metro	02/06/2015	09/06/2015	ACTIVE	Q		✓	
<input type="checkbox"/>	Milano L1 L2	15/12/2015	30/12/2016	ACTIVE	Q		✓	
<input type="checkbox"/>	Progetto formazione	21/10/2016	31/10/2016	ACTIVE	Q		✓	
<input type="checkbox"/>	Progetto Napoli	25/10/2016	31/10/2016	ACTIVE	Q		✓	





# WEB BASED TOOL AT WORK

## BUILDING & CONSTRUCTION

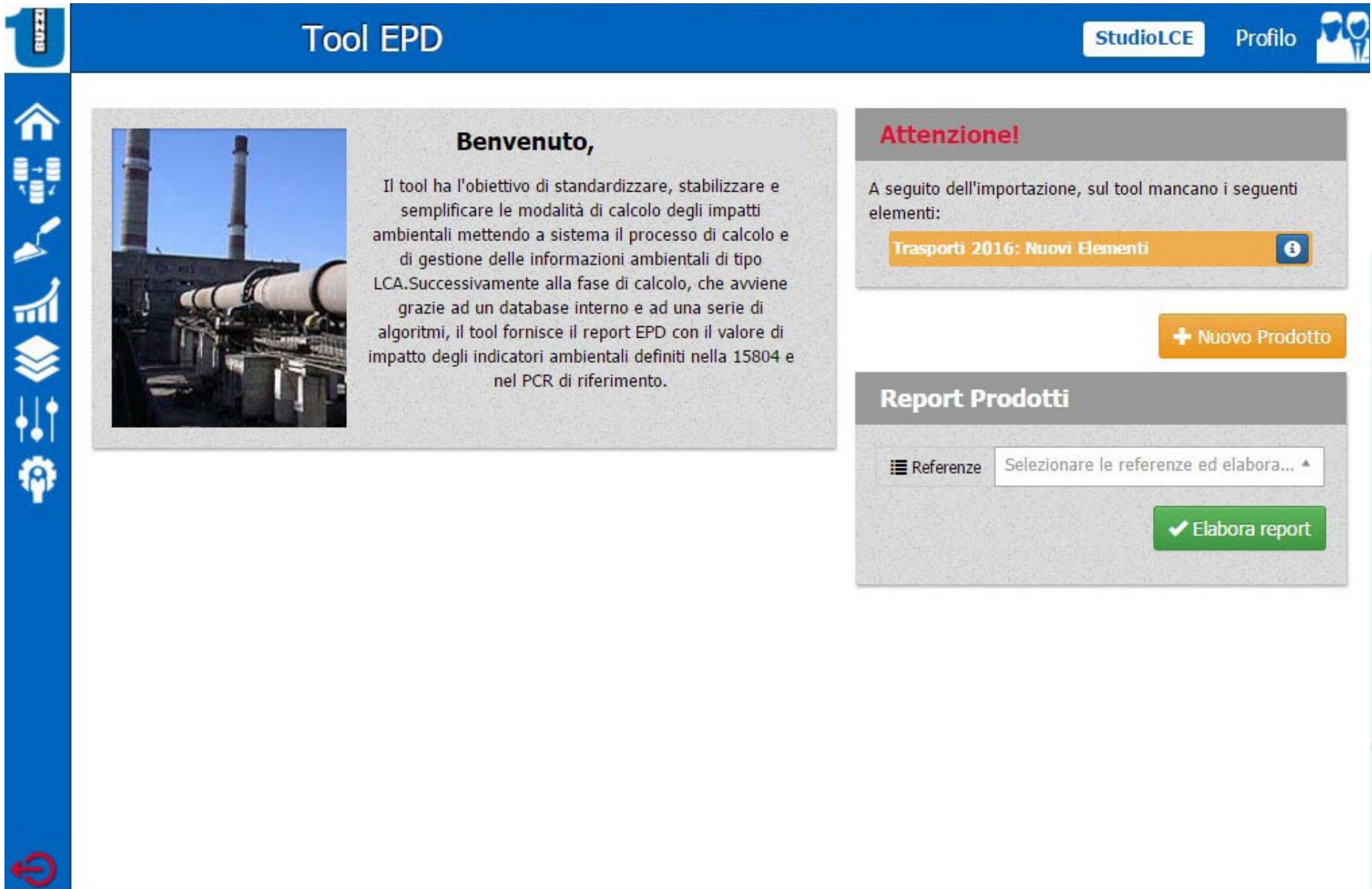


**Buzzi Unicem** is an international multi-regional, “heavyside” group, focused on cement, readymix concrete and aggregates. Buzzi Unicem records over 100 years of industrial activities: founded in 1907, the company currently operates in 12 countries with 9,700 employees. **Unical**, a company belonging to the Buzzi Unicem group, produces ready-mixed concrete in Italy. [www.buzziunicem.it](http://www.buzziunicem.it)

CUSTOMER	BUZZI UNICEM and UNICAL
PLANTS	BUZZI UNICEM: 12 UNICAL: +100
COUNTRIES	Italy
FEATURES / KPI	Collection and data elaboration for the Environmental Product Declaration (EPD) Plant user R&D elaboration
OUTPUT	EPD Report ready for publication LEED/CAM Report with the calculation of recycled content Synthetic reports for the managers office



LCA/EPD Tool



# WEB BASED TOOL AT WORK

BUILDING & CONSTRUCTION



**Holcim – Lafarge** is a leader company in concrete, cement, aggregates production. The Italian branch, founded in 1928, is part of Holderbank Group since 2001.  
**www.holcim.it**

CUSTOMER	HOLCIM ITALIA
PLANTS	11
COUNTRIES	Italy
FEATURES / KPI	Importing and processing data for third-party certified EPDs for concrete products
OUTPUT	EPD document ready for publication - Recycled content



**Tool EPD**

HomeArchivio+Gestione Dati+ReportStrumenti+UtentiDB ambiente

LCE ADMIN  
Urbani Chiara

ULTIME AZIONI

DATA	UTENTE	OPERAZIONE
13/02/2024	HolcimAdminCAL	Duplicazione Mix Design e creazione voce in RD. Codice MD CAM304B3C, (RD num. 1)
05/02/2024	HolcimAdminCAL	Aggiornati dati fornitore e km. Impianto I414 - Rivolta, materia prima C/0000009
21/01/2024	HolcimAdminCAL	Eliminazione RD. Codice

AVVISI

IMPORT	ANNO	MESSAGGIO
Ricette	2021	
Centrali	2021	
Ricette	2022	
Ricette	2022	
Ricette	2022	

A MEMBER OF  
HOLCIM GROUP

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Versione2.1 del 09/02/2024Privacy Policy - Revoca Cookie





# WEB BASED TOOL AT WORK

## PACKAGING



**Coopbox Group** is leader in Italy and Europe in the production of food packaging and packaging systems for fresh products, with a wide range of products spanning from the basic tray in expanded polystyrene, to draining versions able to absorb liquids, to the most advanced gas barrier trays for modified atmosphere packaging. With a 130-million euro turnover, the Coopbox Group has factories, sales offices and subsidiaries in Italy, Spain, Slovakia and France. [www.coopbox.it](http://www.coopbox.it)

CUSTOMER	COOPBOX
USERS	R&D, Marketing
COUNTRIES	Italy, Morocco, Spain, Slovakia
DEVELOPMENT	LCA Reporting R&D elaboration
OUTPUT	Product' Carbon Footprint: - Worksheet Export for R&D elaboration (single unit, comparison of multiple products) - PDF Template for marketing purposes



LCA Tool





AER

**Aerpack B5-50 Bianco PROVA 1** *PCN0265*

I vassoi barriera AERpack nascono per essere utilizzati nel processo di confezionamento in atmosfera protettiva che assicura agli alimenti un'elevata shelf life. Aerpack System abbina i vassoi barriera AERpack al film di chiusura AERtop garantendo prestazioni eccellenti in termini di impermeabilità, durata, tenuta, indeformabilità e trasparenza.



**CLAUDIO FORNACIARI**  
**COOPBOX Group R&D dpt**

"COOPBOX Carbon Footprint Tool based on TEA has become an important step in our new packaging development process and provides important information to improve existing packaging, in the view of reduction of the environmental footprint of our products and production processes".



CARBON FOOTPRINT  
4  
kgCO<sub>2</sub>eq



TRIBUTO DELLE FASI  
MATERIE PRIME  
86%



LA DISTRIBUZIONE



# WEB BASED TOOL AT WORK

## PACKAGING

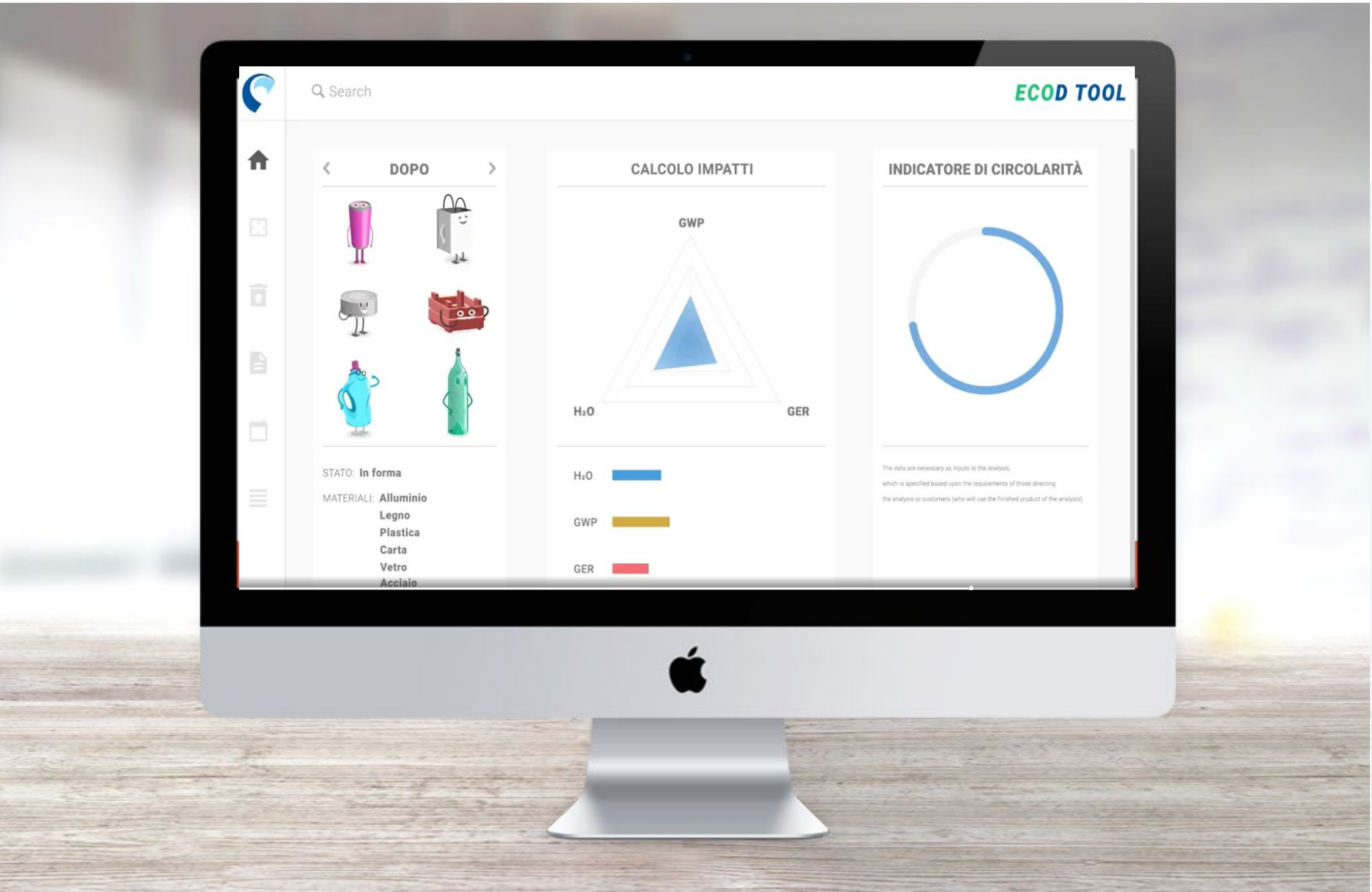


After the successful development of the Ecotool, still in use to participate to the yearly tender to award successful packaging innovations, the **Italian National Packaging Consortium (CONAI)** wanted to go a step further and made available a new area of the webtool a quantitative, scientific-based extension of the online platform to both rapidly assess the sustainability of existing packaging products, as well as to guide the companies with accurate suggestions and Eco-design tips on how to decrease the environmental impacts across the life cycle and provides a wider set of indicators regarding the eco design effectiveness and the recyclability potential. [www.conai.org](http://www.conai.org)

CUSTOMER	CONAI
USERS	CONAI member companies (associates)
DEVELOPMENT	Evaluations of eco-design solutions and tailor-made suggestions
FEATURES/KPI	Comprehensive DB with materials, processes, specific indications on qualitative and formal packaging features. Possibility to use primary data.
OUTPUT	Environmental indicators (carbon, water, energy), potential of recyclable material (MPS), Conai circularity index (ICC), and Eco-design effectiveness indexes.



ECOD Tool





# WEB BASED TOOL AT WORK

## PACKAGING

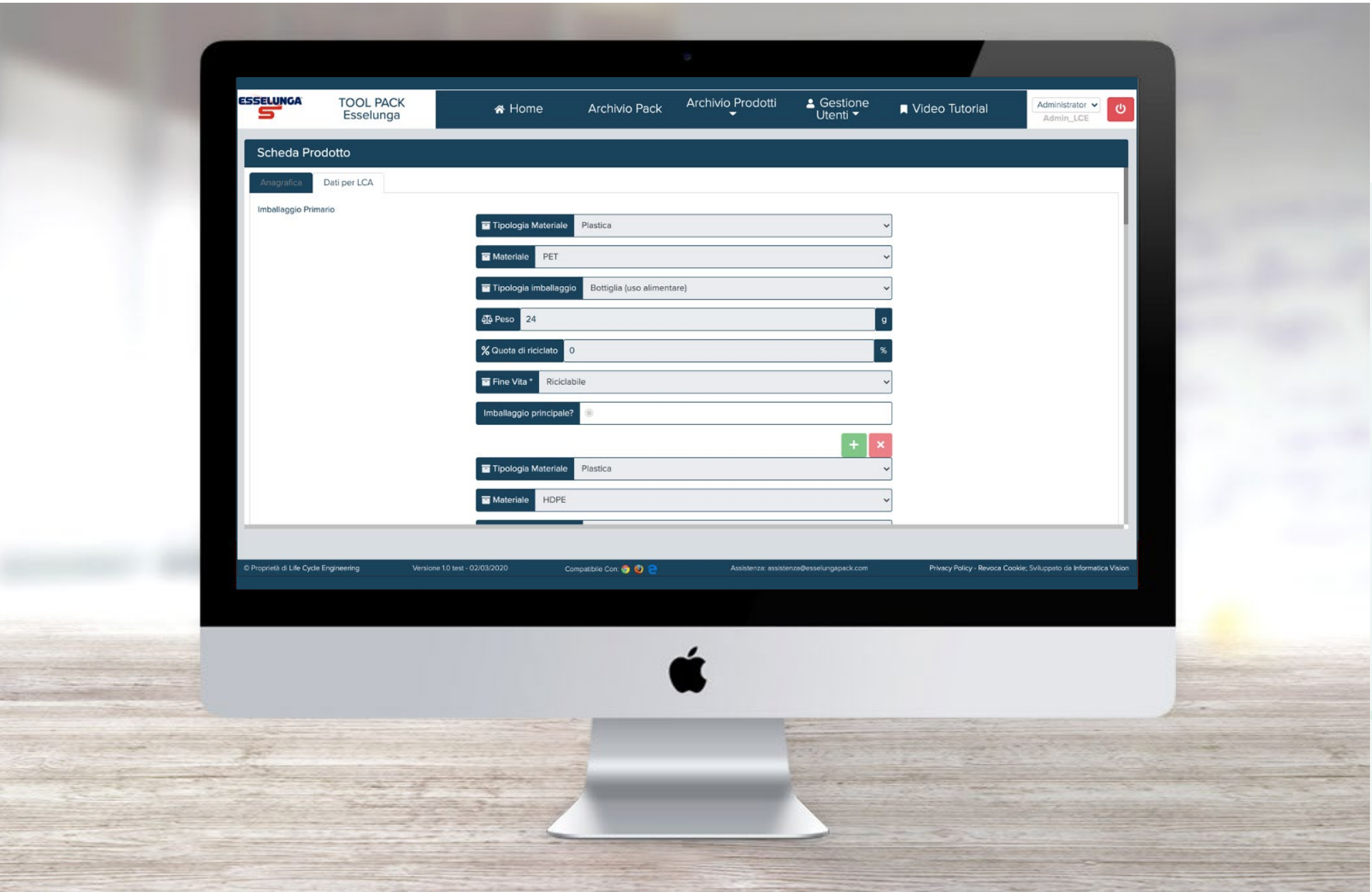


TOOL PACK



Web-tool developed for one of the most famous Italian large scale retailer. Its aim is to support the decision-making process behind the selection of alternative packaging materials and their environmental improvement.

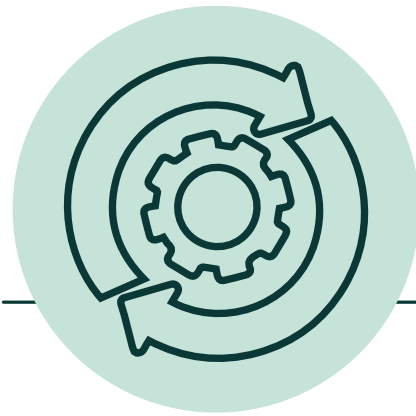
CUSTOMER	Large scale retailer
USERS	Customer’s buyers and suppliers
COUNTRIES	Europe
DEVELOPMENT	Simplified LCA to monitor and compare different packaging solutions
FEATURES/KPI	Company’s centralized packaging repository. Comprehensive DB with materials, processes and end-of-life scenarios.
OUTPUT	Specific results of Global Warming Potential, Water consumption, circularity index, Plastic consumption and their variations between different solutions



# TEA<sup>®</sup> ADDED VALUE

TEA<sup>®</sup> IS NOT SOMETHING NEW, IT IS SOMETHING EASIER

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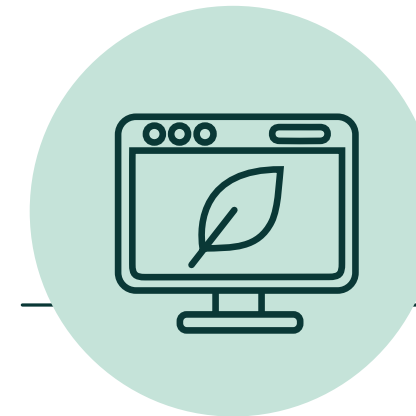
## EFFICIENT

TO COLLECT DATA REDUCING  
COSTS AND TIME;  
TO ACCELERATE THE INVOLVEMENT OF  
INTERESTED PARTIES.



## RELIABLE

TO SUPPORT A CREDIBLE  
COMMUNICATION, PERFORMANCE  
TRENDS AND BENCHMARKING  
(I.E. AVOID GREENWASHING)



## MODERN

USE UNIVERSAL LANGUAGE  
THROUGH THE WEB TECHNOLOGY



**READ MORE**





Tool for Environmental Analysis

IS A REGISTERED TRADEMARK OF

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