



# EMBRACED

## Establishing a Multi-purpose Biorefinery for the Recycling of the organic content of AHP waste in Circular Economy Domain

**Grant Agreement No.:** 745746

**Call (part) identifier:** H2020-BBI-JTI-2016

**Topic:** BBI-2016-D06 – Valorisation of the organic content of Municipal Solid Waste and contributing to the renewable circular economy

**Starting date of project:** June 1<sup>st</sup>, 2017

**Duration:** 60 months

### WP 7 - Dissemination, exploitation and replication Deliverable 7.5 – Report on specialized Forum on Waste and Circular Economy

Due date of deliverable: **31 May 2020**

Actual submission date: **28 May 2020**

**Lead beneficiary:** Rete Ambiente

Dissemination Level (Specify with “X” the appropriate level)		
PU	Public	X
CO	Confidential, only for members of the consortium (including the Commission Services)	



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## LIST OF ABBREVIATIONS

Abbreviation	Definition
AHPs	Absorbent Hygiene Products

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# 1 INTRODUCTION

The present report constitutes the deliverable **7.5 “Report on specialized Forum on Waste and Circular Economy”** within the framework of the EMBRACED project. The following activities refer to WP7 and specifically to task 7.1.

In particular, the report describes the activities carried out by Legambiente for the organization in Italy of specialised Fora on waste and circular economy and the related outcomes. It also provides recommendations for the replication of this type of events in other contexts, as an effective format for the dissemination of the circular economy concept to local authorities, waste management operators, private companies and the civil society.



## **2 SPECIALIZED FORUM ON WASTE AND CIRCULAR ECONOMY**

### **2.1 Premise**

Circular Economy is an economic system designed to maintain the value of products, materials and resources for as long as possible by returning them into the product cycle at the end of their use, while minimizing the generation of waste. It is a production and consumption model that implies sharing, lending, reuse, repair, remanufacturing and recycling of existing materials and products, increasing their life cycle. It is a process that starts at the very beginning of a product's lifecycle: smart product design and production processes can help save resources, avoid inefficient waste management and create new business opportunities.

This model aims to extend the life cycle of products, helping to reduce waste to a minimum. Once the product has finished its function, the materials of which it is made are in fact reintroduced, where possible, into the economic cycle. Thus, they can be continuously returned within the production cycle, generating additional value.

The principles of the Circular Economy contrast with the traditional linear economic model, based instead on the typical "take-make-dispose" extractive model. The traditional economic model depends on the availability of large quantities of materials and energy readily available and at low prices.

Circular Economy does not offer direct solutions to reduce the environmental impacts produced by the linear economic system, but represents a systemic and alternative change. A sustainable revolution, which redefines production processes and services, re-introduces resources into the cycle, generating economic opportunities and benefits for the environment and society. It therefore represents an extraordinary opportunity to make the desired revolution in optimizing the use of natural resources and in waste management, ending the use of landfills and the burning of waste for energy purposes, but not only. Among the EC's objectives there is the fight against food waste, the separate collection of the organic fraction, the life extension of products, restrictions on the recyclability and reparability of goods, putting an end to the phenomenon of planned durability. Environment, economy and social context are key factors, which Circular Economy is based on.

The innovative AHP recycling technology promoted by the EMBRACED project, developed by FATER, for the recovery of important raw materials (plastic, cellulose and poly-absorbent polymer) is an important step in the world of "circularity" that Italy and Europe are trying to build.

The recent approval of the End of Waste decree of the AHPs in Italy (Ministerial Decree of May 15, 2019, n.62 " Regolamento recante disciplina della cessazione della qualifica di rifiuto da prodotti assorbenti per la persona (PAP), ai sensi dell'articolo 184-ter, comma 2,

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del decreto legislativo 3 aprile 2006, n. 152", published in the Official Gazette of 8<sup>th</sup> of July 2020) opens the possibility for the market of secondary raw materials. A necessary and useful step to put into effect Circular Economy processes. The Circular Economy Action Plan of 10 March 2020 of the European Commission also provides important indications on the activities to be put in place at European level and for Member States. So that sustainability can be the determining key of all the processes that guide European action in different sectors: energy, industry, transport, waste management, consumption of resources.

Legambiente, partner of the EMBRACED project, has placed the Circular Economy issues at the centre of its activity for years, activating communication, information, awareness and making effective proposals towards institutions (national, regional and local administrations), businesses and citizens, fundamental actors of this stage. Ecoforum, the peak moment to talk about waste management and sustainability in a "green" key, is part of the usual annual activity of the association. This event is usually held every year in June in Rome, where it has a national relevance: the national Ecoforum. During this appointment with the main Italian actors, seminars, conferences and proposals, including political ones, intersect for the affirmation of sustainability in these processes. On this occasion a contest is organized, where the 'Comuni Ricicloni – Waste Free' are awarded. A competition for public administrations that stand out for virtuous waste management policies. Given its territorial nature, the various regional branches of Legambiente also organize a local edition of the Ecoforum: the Regional Ecofora, where proposals are made concrete with the involvement, in this case, of local stakeholders.

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## **2.2 Ecoforum 2018 in Milan: focus on the EMBRACED project**

In 2018 Legambiente distinguished its dissemination activity by organizing a double event within the Ecoforum organized by its regional Lombardia branch, where the project partners Fater and Natuur en Milieufederatie Noord Holland were hosted (Dutch NGO, involved by Fater as sub-contractor for the development of EMBRACED task 6.3 "Local community active involvement").

The Legambiente conference meeting was held in Milan on 28 November 2018, with the usual 'Comuni Ricicloni' awards at the regional level and the EMBRACED project presentation in one of the plenary sessions of the Ecoforum. It was an opportunity to describe to the over 100 participants (institutions, companies, citizens and students) the objectives, expected results and actions of the project.

During the event, EMBRACED brochures were distributed at the reception desk. Questionnaires on the social acceptance of the project's bio-based products were also filled in by participants.

In parallel, an event was organized where participatory processes and the importance of involving stakeholders in order to define and share strategies for waste management with a circular economy view were discussed. Synergies between the EMBRACED project and other related projects were presented, including the H2020 Waste4Think project. The European Waste4Think project aims to design solutions based on the use of information and communication technologies that would allow the improvement of all waste management phases, adopting a global approach and focusing especially on citizen participation in order to build more sustainable and ecological cities.

A more technical session was dedicated to the municipal waste separate collection company in Milan, AMSA. In a first morning appointment it was also possible to follow the collection and management of the waste management service with AMSA managers, the operators who carried out the service and the operations center.

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The Agenda of the day and some pictures are available below:

SECOND DAY – 28 November 2018, Milan		
Time		Topic
06:45	09:30	Study tour with AMSA to observe the separate waste collection system in place in Milano
09:30	10:00	Royal palace - Welcome greetings to the conference <i>Ecoforum</i>
10:00	10:15	Presentation of <i>Ecoforum</i> to partner Embraced project – <b>Simona Colombo</b> (Director of Legambiente Lombardia)
10:15	10:30	Presentation of Embraced project in <i>Ecoforum</i> – <b>Orsola Bolognani</b> (Fater Group)
11:00	13:00	Workshop on: - participatory approaches to involve citizenship in territorial planning - planning for waste management With: <b>Giorgio Zampetti</b> - General Director of Legambiente <b>Alessio Ciacci</b> - President Acsel Spa & European waste consultant <b>Riccardo Taverna</b> - Director Civil Economy & Sustainability AIDA Partner <b>Cristian Zanelli</b> - ABCittà
14:00	16:15	Workshop on concrete examples: - <b>Milano</b> and its experience in door to door collection With: <b>Cristina Fusco</b> - AMSA, Milan <b>Lorenzo Baio</b> - Citizen of Milan, Legambiente - <b>Seveso</b> and its pilot case on diapers collection ( <i>Waste4Think</i> project) With: <b>Michele Giavini</b> - Project manager Waste4think project <b>Simona Colombo</b> - Director of Legambiente Lombardia <b>Raffaella Mariani</b> - Ecology department of the Seveso municipality <b>Antonio Capozza</b> - Gelsia, waste management company of Seveso



Figure 1 and Figure 2: Study tour with AMSA to observe the separate waste collection system in Milano

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Figure 3 and Figure 4: Embraced Dissemination at the Ecoforum 2018

### **2.3 Ecoforum 2019 in Rome: the EMBRACED project as exemplary case study for overcoming legislative barriers**

At a national level, in June 2019, the EMBRACED project was presented in the Ecoforum that was held in Rome, at the event hall in via Palermo. The 2019 national Ecoforum was held shortly after the signing of the End of Waste decree, which was therefore illustrated together with the potential of the recovery of secondary raw materials and the biorefinery in the Netherlands, among the main project focuses.

The event took place the 26-27 of June. The Ecoforum gathered 5 Sponsors, 2 Institutional Sponsorships, 4 Media Partners, 30 Business Partners, 49 Speakers, an audience of 350 people and the representatives of more than 30 newspapers. The participants were mostly stakeholders, managers of the industry, national and local PA representatives, scientific community and university professors, journalists and communication experts.

EMBRACED project was presented by Marcello Somma, head of R&D and Business Development at Fater, during the session “The new Circular Economy Markets” that took place the 27<sup>th</sup> of June and involved important representatives of Circular Economy in Italy:

- Riccardo Rifici Head of GPP Sector Ministry of the Environment and Land and Sea Protection
- Ivana Appolloni General Manager of the Gomitolo Rosa Association
- Alessio Ciacci President of ACSEL
- Andrea Cuccaro Head of Communication and Marketing BioTable
- Christian Garaffa Marketing Manager Source Separation & Recycling Novamont
- Federica Giannattasio Ceo Iterchimica
- Massimo Medugno Assocarta Director
- Marta Schiraldi Technical and Quality Director Nespresso Italy

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- Marcello Somma Director of R&D and Business Development of FaterSMART-Business Unit Fater
- Giorgio Tanoni Sole Director of Adriatica Oli
- Maurizio Zara Vice-President of Legambiente Umbria

The EMBRACED Leaflet was distributed during the event and a dedicated Facebook Post was released on EMBRACED Project Social Media in order to promote EMBRACED participation at the event. The press review of the event can be consulted at this link: <http://forumrifiuti.it/stampa/2019>.

The afternoon of the 27<sup>th</sup> of June was dedicated to the 'Comuni Ricicloni – Waste Free' Awards. It involved 2 business partners, 547 Waste Free Municipalities, an audience of 400 people. Among the participants: MEPs and national institutions, national and local public administration representatives, journalists and communication experts, operators in the sector.



Figure 5 and Figure 6: Embraced presentation during the Ecoforum and Ecoforum audience



Figure 7 and Figure 8: Fater Smart "Comuni Ricicloni" awards

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Figure 9 and Figure 10: Embraced dissemination at the Ecoforum

## 2.4 Legambiente's Ecoforum as dissemination activities on Circular Economy

In 2019, there were numerous Ecoforum appointments at a regional level where the association brought Circular Economy, sustainability and Green Economy topics to the national territory. The difficulties and excellence that characterize this challenge were illustrated, including the potential and results achieved so far by the EMBRACED project.

*Ecoforum Legambiente, 2019 editions:*

REGION	CITY	LOCATION	DATE
<b>Abruzzo</b>	Pescara	Sala Tinozzi, Palazzo della Provincia	06/12/2019
<b>Campania</b>	Napoli	Università Federico II	24/10/2019
<b>Emilia Romagna</b>	Guastalla (RE)	Palazzo Ducale	31/10/2019
<b>Lazio</b>	Roma	Hotel Quirinale	17/12/2019
<b>Liguria</b>	Genova	Palazzo Tursi	18/12/2019
<b>Lombardia</b>	Milano	Palazzo Reale	26/11/2019
<b>Marche</b>	Camerano (AN)	IKEA	02/10/2019
<b>Piemonte</b>	Torino	Salone della Pace, Sermig Arsenale della Pace	11/12/2019
<b>Sardegna</b>	Cagliari	Istituto Michele Giua	12/12/2019
<b>Sicilia*</b>	Tutte le Province	Ecoforum provinciali (Sicilia Munnizza Free)	2019
<b>Toscana*</b>	Prato	Centro PECCI, Viale della Repubblica 277 - Sala	29/11/2019

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REGION	CITY	LOCATION	DATE
		del Cinema	
Umbria	Narni	Sala Digipass del Comune	09/11/2019
Veneto	Venezia, Vicenza, Padova, Treviso		02-06/12/2019
Molise	Campobasso	Camera di Commercio	22/01/2020

*NB: Comuni Ricicloni regional edition is performed in every region, except for Sicily and Tuscany, which make special editions of Ecoforum and for Puglia which instead concentrates its activity only on the national initiative Comuni Ricicloni.*

Fater, leader of the EMBRACED project, has been collaborating in the Legambiente Ecoforum both at a national and regional level, participating in the regional event in Abruzzo, and at the national event in Rome.

Furthermore, in the good synergy created to promote sustainable activities such as the collection and recovery of AHP, the company supports the campaign of Comuni Ricicloni, with a special prize aimed at municipalities and companies that stand out for the recovery and management of AHP products from waste.

**FaterSMART "Comuni Ricicloni" award** is now at its 6<sup>th</sup> edition: it was created to reward Italian companies that have distinguished themselves for having provided, in the context of separate collection, a service dedicated to diapers for children and/or adult incontinence products. In fact, to date, 12 million Italians have already been reached by a separate collection service for AHPs. The service has the aim of minimizing the inconvenience for citizens, resulting from keeping malodorous waste for several days at home. At the same time, do not place a burden on families where there are children or people with incontinence, where the tariff system provides for a variable quota based on the volume of dry residue produced. The company's hope is that recycling systems can be created which, building on the excellence already highlighted in the specific collection of AHPs, give new life to secondary raw materials that can be reintroduced in new production processes, as demonstrated by the recycling system designed by FATER. With this in mind, FATER decided to recognize the importance of the contribution of Municipalities and waste management companies, rewarding in agreement with Legambiente the reality that has proven to have implemented the best preparatory practices for the recycling of baby diapers and adult incontinence products (AHPs).

The prize winners in the past three years are reported below:

### ❖ FATER "Comuni Ricicloni 2019" AWARD

The winner of the FaterSMART - Comuni Ricicloni 2019 award was Esa-com SpA. Company that operates the separate collection of AHPs, for a basin of approx. 100.000 inhabitants in the Province of Verona, with innovative methods that have proven to be efficient, effective and without additional costs thanks to the installation of special 200 lt cassettes on the sides of the vehicles used for the organic waste collection. This

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solution is considered one of the best practices by national and international collection operators interested in the FaterSMART recycling system. The AHPs collected by Esacom are already recycled today at the FaterSMART plant operating at the Contarina site in Treviso.

### ❖ **FATER “Comuni Ricicloni 2018” AWARD**

The winner of the 2018 FaterSMART - Comuni Ricicloni award was Ecolan. Company of Lanciano (PE), which operates a separate collection of AHPs with innovative methods that have proven to be efficient, effective and without additional costs, thanks to 360 lt wheelie bins hooked to the vehicle that collects other fractions.

### ❖ **FATER “Comuni Ricicloni 2017” award for the best separate collection for baby diapers and adult incontinence products.**

The Municipalities awarded at FaterSMART – Comuni Ricicloni 2017 were:

- ◆ Trento (TN)
- ◆ Sommacampagna (VR)
- ◆ Tramonti (SA)

The municipalities awarded were identified considering also Legambiente’s data, relating to the Italian excellence classified on the basis of the good management index, and the analysis of the consulting company Ambiente Italia, which periodically monitors the Municipalities where a separate collection dedicated to AHPs is active.



### **3 ECOFORUM AS A REPLICABLE MODEL OF STAKEHOLDERS INVOLVEMENT**

It was 1994 when Legambiente began to compare, in a completely positive contest, the Italian Municipalities according to the results achieved in terms of separate collection (<http://www.ricicloni.it/che-cose>). Starting from a small group of Municipalities that gradually, thanks to their example and the exchange of experiences and good practices (another of the pillars of Legambiente's Comuni Ricicloni), increased its travel companions. The first Forum Rifiuti was held in 2014, set up in all respects with today's format. In 2017 (Ecoforum IV edition: <http://forumrifiuti.it/edizioni>), the year of definitive approval of the European Circular Economy package, the Forum changes its name and becomes Ecoforum, maintaining the organizational approach of previous years.

Ecoforum is a format created by Legambiente, in collaboration with Nuova Ecologia and Kyoto Club, to address the issue of a correct waste management, sustainability and Circular Economy in a new and modern way, according to the peculiarities of the association.

The aim is to bring to the attention of the political agenda and public opinion the obstacles that limit the emersion of environmentally friendly technologies. First, to remove them and then to give voice to possible solutions and to highlight the good practices and excellence already present today. Then, to open a debate between scholars, researchers, companies and administrators, to discuss policies and actions to be implemented.

Among the **key elements** of the **Ecoforum**:

- The involvement of the **main players of the sustainability world** at the same "circular" table: the political decision-makers of public administrations - both at the national institutional level and small local entities - and the productive and innovative part of business;
- The presentation of **reports, good practices and dossiers** on issues relevant and useful to the reasoning and the proposals that the association carries out on the topic, for an integrated development between the environment and man;
- The involvement of different actors from **the university and research world**, to keep up with what the association calls **scientific environmentalism** and which it applies in all its activities.

During the Forum, which also becomes a meeting place, exhibition and debate, the award ceremony is also organized for the local authorities that stand out for the separate collection (Comuni Ricicloni initiative). This initiative is one of the most important links with the integrated management of waste and fosters the reduction of the production of dry residual waste per capita. Local administrations are invited to participate in a public event

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of considerable interest and resonance in half a day at the end of the Ecoforum, to withdraw a long-awaited and highly reputed recognition. The winners are the Municipalities that stood out for the performance of the previous year on the basis of data collected and processed by Legambiente through questionnaires to which the administrations respond voluntarily. About 2,000 municipalities respond each year.

The forum does not lack the participation of political actors, decision makers and institutional personalities, all amplified by the media echo created through newspapers, TV, web and social media. The two days of work are spaced out mainly by three moments:

1. Seminars in plenary, where the main topics that the association wants to focus on are discussed;
2. A series of appointments and meetings for exchange and debate, with the presentation of new companies, technologies, national and European projects, sector research, workshops;
3. Half a day of national awards of the Comuni Ricicloni.

The national edition is held in Rome. Following, the various regions where Legambiente is active, the Ecoforum is replicated in the so-called Regional Ecoforum. Regional Ecofora often have a single day programme in which both the regional conference and the award ceremony of 'Comuni Ricicloni – Waste Free' are concentrated. The Regional Ecofora focus more on the problems and good practices related to the Circular Economy of the region.

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## **4 REFERENCES**

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- ✓ <https://www.economiacircolare.com/>;
- ✓ <https://canzonecircolare.legambiente.it/>
- ✓ <http://www.forumrifiuti.it/>
- ✓ <https://www.gazzettaufficiale.it/eli/id/2019/07/08/19G00071/sg>