Dissemination level: PU



In-built Triggered Enzymes to Recycle Multi-layers: an Innovation for Uses in plastic-packaging

D8.4: Industrial workshop organisation

WP8: Communication, dissemination and exploitation activities; assessment of legislative and economic aspects

Project Information

| Grant Agreement n° | 814400 | |
|--------------------|-----------------------------------|--|
| Dates | 1st January 2019 – 31st July 2023 | |

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Dissemination level: PU

Document status

DOCUMENT INFORMATION

| Deliverable name | D8.4: Industrial workshop organisation |
|----------------------------|--|
| Responsible beneficiary | Recycle-Consulting |
| Contributing beneficiaries | Recycle-Consulting |
| Contractual delivery date | 28/04/2023 |
| Actual delivery date | 28/04/2023 |
| Dissemination level | PU |

DOCUMENT APPROVAL

| Name | Position in project | Organisation | Date | Visa |
|---------------|---------------------|--------------|----------|------|
| Alexis Beakou | Coordinator | SIGMA | 28/04/23 | OK |

DOCUMENT HISTORY

| Version | Date | Modifications | Authors |
|---------|------------|-------------------|-----------|
| V0 | 20/04/2023 | Document created | T.Langon |
| V1 | 24/04/2023 | Text written | V. Verney |
| Vf | 28/04/2023 | Final corrections | V. Verney |



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Version Vf Abbreviations

| ВОРР | Bi-oriented PolyPropylene |
|--------|--|
| CEFLEX | Circular Economy for Flexible Packaging |
| CIW | Common Industrials Waste |
| EFSA | European Food Safety Authority |
| EPR | Extended Producer Responsibility |
| EVOH | Ethylene Vinyl Alcohol |
| LDPE | Low Density PolyEthylene |
| MDO | Machine Direction Oriented |
| NGO's | Non-Governmental Organization |
| NIR | Near Infra-Red |
| OPA | Oriented PolyAmide |
| PBS | Polybutylene succinate |
| PBSA | Polybutylene succinate Adipate |
| PCL | Polycaprolactone |
| PET | PolyEthylene terephtalate |
| PRE | Plastic recycled Europe |
| PUR | PolyURéthane |
| PVDC | PolyVinylidene Chloride |
| SMART | Specific, Measurable, Achievable, Relevant, Time-bound |

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Executive summary

During Terminus project, the partners must organize an industrial workshop held faced to the industrial companies to deliver the main outputs of the industrial exploitation results of the Terminus project.

Deliverable report

Introduction

It has been decided to organize the Terminus Industrial Worksop at Clermont Auvergne INP by 2023, April 12th and 13th.

For the organization, a local organization committee has been built-up. It is constituted of:

- The Terminus management team: A. Beakou (general coordinator), T. Langon (administrative coordinator), V. Verney (Scientific and Technical coordinator)
- Nina Knezic (Terminus dissemination manager)
- Administrative support persons from Clermont-Auvergne INP, Andrée Amadoro secretary (flyers, badges, reservations), Sabine Sadargues (badges and photos), Veronique Sibert (informatics and technical survey), Claudia Dessi (Postdoc participants welcoming)

The main goal of the organization committee has been to define the technical agenda and to check all the logistic details for the workshop for a good venue of the attendees.

We have selected to highlight four topics in relation with Terminus project:

- 1- Multilayers&Delamination
- 2- Recycling
- 3- Digitalization
- 4- Circular Economy

For each topic it has been decided to contact and to invite both other EU projects and Industrial companies. We have also offered the floor to Terminus Industrial partners and to Terminus main results.

After selection of the invited talks, V. Verney has conducted face to face Visio meetings to precise and define the attempts of the workshop. Finally, the final following program has been built up

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Version Vf Program

Day 1

| Time | Session | Speaker |
|-------------|---|---|
| 9:00-09:30 | Welcome and Opening: Terminus | Vincent Verney, CEO, Recycle Consult |
| 9:30-10:00 | Covestro's pathway to a circular economy in printing and packaging | Thomas Fait, New Business Development Manager Adhesives, Covestro |
| 10:00-10:30 | Mandala Project: a sustainable future for multilayer packaging | Katrin Nord-Varhaug, Principal Researcher, Norner AS |
| 10:30-11:00 | Merlin Project: Increasing the quality and rate of MultilayER packaging recycLINg waste | César Aliaga, Head of Packaging and Circular Economy, ITENE |
| 11:00-11:20 | Coffee break | |
| 11:20-11:50 | Multilayer films merging recyclability and reusability in food packaging application | Alexandre Fontaine, Corporate Social Responsibility Manager, STTP Emballage |
| 11:50-12:10 | Mechanical recycling of multilayer plastic packaging producing high-quality recyclates | Oksana Horodytska, Co- founder and COO, FYCH Technologies |
| 12:10-13:30 | Lunch | |
| 13:30-15:00 | Visit of CTT Facilities | |
| 15:00-15:30 | Center for Sustainable Materials: an open ecosystem aimed at creating new recycling streams for materials | Pierre Robert, VP Ambition Test Program, Michelin |
| 15:30-16:00 | Agro2Circular: Territorial solution for the recycling of metallised multilayer packaging waste generated by the food industry | Sergio José Benítez, Project Technician, CETEC |
| 16:00-16:30 | Delamination and deinking of plastics films: From laboratory to industrial scale | Martijn Roosen, Department of Green Chemistry and Technology, Ghent University |
| 16:30-16:45 | Coffee break | |
| 16:45-17:00 | Terminus Multilayers - Delamination&Recycling | Haroutioun Askanian, Insititute of Chemistry, Clermont Auvergne INP Rigoberto Ibarra Gómez, R&D Project Manager, IPC – Centre Technique Industriel de la Plasturgie et des Composites |
| 17:00-17:30 | CIMPA project: a circular multilayer plastic approach for value retention of end-life multilayer films | Sami Zakarya, R&D Engineer, Leygatech |
| 17:30-18:00 | Towards more recycled materials from plastic packaging waste with Circular FoodPack project | Virginie Decottignies, Head of Advanced Recycling Department, Suez |
| 20:00 | Dinner Casino de Royat | |

Dissemination level: PU

Day 2

Version Vf

| Time | Session | Speaker |
|-------------|--|---|
| 8:30-9:00 | Welcome and Opening | Vincent Verney, CEO, Recycle Consult |
| 9:00-9:30 | Empirical assessment of the Circular economy transition. Indicators for a multi-level perspective | Manuel Morales, Researcher, UCA-ERASME Jean-Monnet |
| 9:30-10:00 | SURPASS - Safe-, sUstainable- and Recyclable-by design Polymeric systems: A guidance towardS next generation of plasticS | Sébastien Artous, Project Manager, CEA |
| 10:00-10:20 | Terminus Digital Product Passport (DPP): Packaging Circularity via Digitization | Wathsala Jinadasa, Researcher, Norner |
| 10:20-10:35 | Coffee break | |
| 10:35-11:05 | Avoided GHG emissions in the French recycling sector | Dieuwertje Schrijvers, Project Manager, WeLOOP |
| | | Pieter Deckers, Project Manager Sustainability Assessment Services, Nornec |
| 11:05-11:20 | Terminus LCA & Circular Economy | OWS |
| 11:20-11:50 | ТВС | TetraPak |
| 11:50-12:00 | Conclusions | |
| 12:00-13:30 | Lunch | |

Manuka

A graphic facilitator has also been involved during the workshop to produce graphics that will be used further for dissemination through social networks. Visuals are produced in the form of graphics and drawings and in the form of a commented photo report.



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Slides and contents

Slides and contents will be shared among participants for further discussions.

Conclusions



All the attendees have been enjoyed by the workshop. Their feedbacks were that the chosen topics was excellent and the mixing between industrials and EU projects was very fruitful for discussion and connections. We have decided to continue to keep in touch to look forward potential clustering activities on these topics. Moreover, as far as Terminus is concerned, it has been the opportunity to recruit new SAB members to support our final evaluation.



Participants

List day 1

| efix | Surname | Name | Company | Job title | Sign-in |
|-------|------------|--------------|---|---|--|
| Mr. | Hissein | Adam | INSA Lyon | Phd | - that |
| Mr | Sebastien | Artous | CEA | | ARIBUS |
| Dr. | Haroutioun | Askanian | Clermont Auvergne INP | Researcher | 3 |
| Mr. | Gezaei | Asmelash | Clermont Auvergne INP SIGMA Clermont | PhD Student | 4 |
| Miss | Justine | Auclair | SUEZ | Materials Engineer | A |
| Prof. | Alexis | Béakou | Clermont Auvergne INP | Full Professor | 2 seafor |
| Mr. | Sergio | Benitez | CETEC | Project Technician | |
| Mrs. | Nadege | Boccon | BENKEI | Innovation Consultant | THE STATE OF THE S |
| Mrs. | Marion | Brosset | IPC | Project Manager | Box |
| Mr. | Steeve | Collin | CNEP | Research Manager | 4 |
| Miss | Flore | Dargent | STTP EMBALLAGE | R&D assistant | X y |
| Mr. | Pieter | Deckers | Normec OWS | project manager | |
| Mrs. | Virginie | Decottignies | SUEZ - CIRSEE | Head of Materials Recycling & Recovery Dept | Deedto justi |
| Dr. | Claudia | Dessi | Clermont Auvergne INP | Postdoc Researcher | Claudo D |
| Mr. | Thomas | Fait | Covestro Deutschland Ag | New Business Development Manager Adhesives | Pert |
| Mr. | Alexandre | Fontaine | STTP EMBALLAGE - AFD GROUPE | CSR Mananger | |
| Dr. | Dominique | Fromageot | CNEP | R&D Director | Ducq |
| Mr. | Guillaume | Gamon | CITEO | Recycling development project manager | 10 |
| | Oksana | Horodytska | Fych Technologies, S.L. | Project Manager | J/m2 |
| ∕ls. | Mohammed | Houssat | Université Clermont Auvergne | Postdoctoral researcher | 20.10 |
| Or. | Monanined | | | During the manager | A CONTRACTOR OF THE PARTY OF TH |
| ۸r. | Rigoberto | Ibarra Gomez | IPC / | Project manager | M. H. v. Whinda |
| or. | Wathsala | Jinadasa | Norner AS | Researcher | Control of the contro |
| rs. | Emmanuelle | Kiener | Manuka Ciermont Auvergne INP | Graphic facilitator | -802 |
| Ir. | Luna | Kitila | SIGMA Clermont | PhD Student | |
| of. | Khalid | Lamnawar | INSA Lyon UMR CNRS 5223 | Full Professor | |



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Dissemination level: PU

| Ms. | Tania | Langon | BENKEI | Consultant | |
|-------|--|--------------|--|------------------------------|-------------------|
| Ms. | Emna | Masghouni | INSA Lyon | PhD | |
| Mr. | Manuel | Morales | Université Clermont Auvergne CERDI - ERASME | Researcher | 2 |
| Mr. | Herve | Mousty | CNEP | PDG | A |
| Mr. | Ole Jan | Myhre | Norner AS | Packaging Advisor | Olofon Man |
| Dr. | Katrin | Nord-Varhaug | Norner AS | Principal Researcher | Kapin Nord Jornan |
| Mr. | Jeremy | Peyroux | IPC | Project Manager | |
| Mr | Pierre | Robert | MFP MICHELIN | | 0.00 |
| Mrs. | Martijn | Roosen | Ghent University | | ROSMA |
| Mr. | Nicola | Schiavone | NaturAdds | Project Manager | |
| Mr | Dieuwertje | Schrijvers | WELOOP | Project Manager | 6 |
| Mrs. | Laura | Sisti | University of Bologna | Prof. | Lace lise. |
| Dr. | Mohamad | | Clermont Auvergne INP SIGMA Clermont | Associate professor | |
| ∕lrs. | Delphine | Tissier | CT-IPC | analytical chemical engineer | 0) |
| Or. | Aurellien | Tournebize | CNEP | Research Manager | 45 |
| Or. | Simona | Varriale I | Biopox srl | researcher | Syrais Voicible |
| 1r. | Vincent | Verney F | Recycle Consulting | CEO | |
| ır. | Lazaros | Vozikis | NSA Lyon | PhD student | To As |
| ır. | Sami | , | EYGATECH | R&D Engineer | 3 |
| 10 | Visite Visite P 13/04/2023 Organisateurs | 11.455H-(A. | ER 68CC | D6 | A |
| | | | | | |



List Day 2

Version Vf

| Prefix | Surname | Name | Company | Job title | in in |
|--------|--------------|--------------|--|---|--|
| Mr. | Hissein | Adam | INSA Lyon | | Sign-in |
| Mr | Sebastien | Artous | CEA CEA | Phd | A A A A A A A A A A A A A A A A A A A |
| Dr. | Haroutioun | Askanian | A STATE OF THE STA | | 4 |
| 6 % | Transcriptin | Askanian | Clermont Auvergne INP Clermont Auvergne INP | Researcher | 3 |
| Mr. | Gezaei | Asmelash | SIGMA Clermont | PhD Student | |
| Miss | Justine | Auclair | SUEZ | Materials Engineer | A STATE OF THE STA |
| Prof. | Alexis | Béakou | Clermont Auvergne INP | Full Professor | alsaber |
| Mr. | Sergio | Benitez | CETEC | Project Technician | AD |
| Mrs. | Nadege | Boccon | BENKEI | Innovation Consultant | |
| Mrs. | Marion | Brosset | IPC | Project Manager | Biene |
| Mr. | Steeve | Collin | CNEP | Research Manager | S (flui |
| Miss | Flore | Dargent | STTP EMBALLAGE | R&D assistant | 4 |
| Mr. | Pieter | Deckers | Normec OWS | project manager | |
| Mrs. | Virginie | Decottignies | SUEZ - CIRSEE | Head of Materials Recycling & Recovery Dept | Decellogy |
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| Mr. | Thomas | Fait | Covestro Deutschland Ag | New Business Development Manager Adhesives | 7G+ |
| Mr. | Alexandre | Fontaine | STTP EMBALLAGE - AFD GROUPE | CSR Mananger | W . |
| Dr. | Dominique | Fromageot | CNEP | R&D Director | |
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| | Mohammed | , | Université Clermont Auvergne | Postdoctoral researcher | |
| Dr. | ivionammed | 11003340 | 5 | | 08.0 |
| Лr. | Rigoberto | Ibarra Gomez | IPC | Project manager | No. |
| or. | Wathsala | Jinadasa | Norner AS | Researcher | M. f. c. N. Hnadasa |
| rs. | Emmanuelle | | Manuka Ciermont Auvergne INP | Graphic facilitator | |
| ır. | Luna | | SIGMA Clermont | PhD Student | |
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Dissemination level: PU

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| ۸s. | Emna | Masghouni | | Consultant | Laufou. |
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| Λr. | Manuel | Morales | Université Clermont Auvergne CERDI - ERASME | Researcher | 14 P |
| ۸r. | Herve | Mousty | CNEP | PDG | ger. |
| Mr. | Ole Jan | Myhre | Nomer AS | Packaging Advisor | Wohanller |
| Dr. | Katrin | Nord-Varhaug | Norner AS | Principal Researcher | data Nord-Johans |
| Mr. | Jeremy | Peyroux | IPC | Project Manager | |
| Mr | Pierre | Robert | MFP MICHELIN | | |
| Mrs. | Martijn | Roosen | Ghent University | | |
| Mr. | Nicola | Schiavone | NaturAdds | Project Manager | |
| Mr | Dieuwertje | Schrijvers | WELOOP | Project Manager | |
| Mrs. | Laura | Sisti | University of Bologna | Prof. | Laure Whi |
| Dr. | Mohamad | Sleiman | Clermont Auvergne INP SIGMA Clermont | Associate professor | |
| Mrs. | Delphine | Tissier | CT-IPC | analytical chemical engineer | |
| Dr. | Aurellien | Tournebize | CNEP | Research Manager | |
| Dr. | Simona | Varriale | Biopox srl | researcher | Simona variale |
| Mr. | Vincent | Verney | Recycle Consulting | CEO | 1' |
| Mr. | Lazaros | Vozikis | INSA Lyon | PhD student | |
| Mr. | Sami | Zakarya | LEYGATECH | R&D Engineer | 2 |

| Visite |
|---------------|
| Visite |
| |
| P 13/04/2023 |
| Organisateurs |