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Modular, scalable and high-performance **DE**-polymerization by **MicrowavE TechnolOgy**

D9.7

Dissemination and Communication material – M21

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DOCUMENT HISTORY

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1.1	07/05/2019	Major	Final Draft	All
1.2	DD/MM/AAAA	Minor		
2.0	DD/MM/AAAA	Major		
2.1	DD/MM/AAAA	Minor		

LIST OF ABBREVIATIONS AND GLOSSARY

Acronym	Explanation
IAB	Industrial Advisory Board
WP	Work Package

1 EXECUTIVE SUMMARY

This document gathers all the communication and dissemination materials development for the project until M21.

In the document all dissemination and communication materials are listed and explained. It covers the brochure, the banner, the general power point presentation, the templates, the press releases, the website, the e-newsletter, the video, the material for the workshops as well as the social media activities.

Furthermore, it looks at the materials that will be published at a later stage of the project.

2 DISSEMINATION AND COMMUNICATION MATERIALS

2.1 Brochure

One of the main deliverables of DEMETO is the project-own brochure which is presented at conferences and workshops as well as in the offices of the DEMETO partners. This way, visitors, partners, clients and internal staff members are constantly informed about the state of the project.

On six pages the brochure describes the background and the objectives of the project and presents the partners involved. Like the rest of the communication material, the design of the brochure matches the DEMETO logo. The brochure is regularly updated according to the state of the project.

2.1.1 Brochure – Version 1: September 2017

The brochure cover features the gr3n logo at the top. Below it, the word "EXPECTED IMPACT" is underlined. A text box states: "The sheer and direct numbers of the preliminary LCA study do not convey fully the real opportunity posed by DEMETO. In 2015 an estimated 32% of plastics escaped the collection system globally. This means that today, at least 8 million tonnes of plastics leak into the ocean every year. While the total economic impact is still unclear, initial studies suggest that it is at least in the billions of euros. Just in Europe, where leakage is relatively limited, potential costs for coastal and beach cleaning alone could reach €630M per year. In addition to them, there are potential adverse impacts on human livelihoods and health, food chains, with more than 260 species already known to be affected by plastic debris through entanglement or ingestion. DEMETO's technology is the first one that would allow to finally close the recycling loop for PET, with a potential impact on environment and society at large that would be enormous, introducing the concept of full circular economy in the plastic domain." To the right, the word "CONSORTIUM" is underlined, followed by a grid of partner logos: ACTOR, EDUPC, :fm, H&M, Processi Innovativi, neogroup, PET, SUPSI, Synesis, 3V TECH, and ITU. The central part of the cover features the DEMETO logo with the tagline "Modular, scalable and high-performance de-polymerization by Microwaves". Below the logo, the text reads: "Offering to plastic producers and to waste recyclers a profitable way to treat plastic waste, enabling its chemical recycling and closing its life cycle." At the bottom left, there is a table comparing GWP and Energy content between DEMETO and conventional PET. The table has three columns: GWP (kg CO₂/kg PET) with values 1.28 and 2.08, Energy content (MJ/kg PET) with values 21.6 and 66.3, and a third column with "-38%" and "-67%" indicating reductions. The bottom right contains the European Union flag and the text: "This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 768573, DEMETO."

	GWP (kg CO ₂ /kg PET)	Energy content (MJ/kg PET)	
DEMETO	1.28	21.6	-38%
Conventional PET	2.08	66.3	-67%

CONTACT US

www.spire2030.eu/demeto

info@gr3n-recycling.com

CONTEXT AND OBJECTIVES

The last 40 years have seen a constant and apparently unstoppable growth of the polymers global production, due to the widespread adoption of plastic materials in fundamental applications of both the industrial and consumer goods domains, posting a sound 5% CAGR yearly and reaching about 381M tonnes in 2014. Indeed, PET is replacing the conventional packaging materials, such as glass, aluminium paper, and metal due to its light weight.

This context of increasing global importance of PET inevitably raises concerns about the future sustainability of its market. In fact, and this is the crucial point, today PET is reused and not recycled, despite the "abuse" of terminology by the plastics waste management sector: compared for instance to a really recycled material such as aluminium, each time PET is re-used the quality of its polymers degrades, inevitably leading to landfill or combustion for energy generation.

DEMETO proposes the industrialization and demonstration at full scale of a new industrial process which allows for the first time to recycle chemically PET bottles, food containers and even textiles in a highly profitable and environmentally sustainable way.

INNOVATIVE TECHNOLOGY

Exploiting the scientific fact that microwaves excite the rotational degrees of freedom of certain molecular groups of PET, the core technology of DEMETO's has been invented by gr&n to enable an effective Process Intensification of the depolymerisation reaction (hydrolysis) of plastic, from bottles as much as from any other source, leading it back to its building blocks (EG and PTA) and, consequently, allowing their full re-introduction directly at the virgin-grade production stage.

Already patented at international level and validated at different TRLs, the major strength of DEMETO's core concept is the adoption of a full process approach that, embedding at its heart the process intensifying MW-based reaction, then proposes a completely self-contained post-processing unit whose outputs, apart from the virgin grade EG and PTA raw materials, will generate directly feedstock for the overall de-polymerization process.

BUSINESS POTENTIAL

The business exploitation strategy of DEMETO is based on a synergistic relationship between two industrial stakeholders: gr&n, as the manufacturer of the Reactive Units, and Processi Innovativi, as EPC contractor to build the full-scale depolymerization plants. The former will supply the latter with all the reactors needed to realize the plants required to cover progressively the total available market.

Starting from the European area and with a focus on coloured bottles waste, the envisioned exploitation already foresees extensions to other markets.

Key Figures:

- ~2.5M tonnes of PET for packaging was collected in Europe in 2014
- 45% are colorless, treated by Mechanical recyclers to produce R-PET flakes
- Other waste, 1.4M tonnes could be treated by gr&n technology
- ~100 gr&n plants could treat EU packing PET colored waste
- To treat global packing colored waste additional 200 plants including other PET collected waste +400 plants are needed

2.1.2 Brochure – Version 2: July 2018

Expected Impact

DEMETO will be:

- The first industrial plant in Europe to conduct a full waste-to-monomer recycling of PET
- The only facility to treat all sorts of post-consumer PET in one process
- The first European project to apply chemical recycling at an industrial scale

As a frontrunner project DEMETO will set new standards for the entire PET recycling industry

dem&to

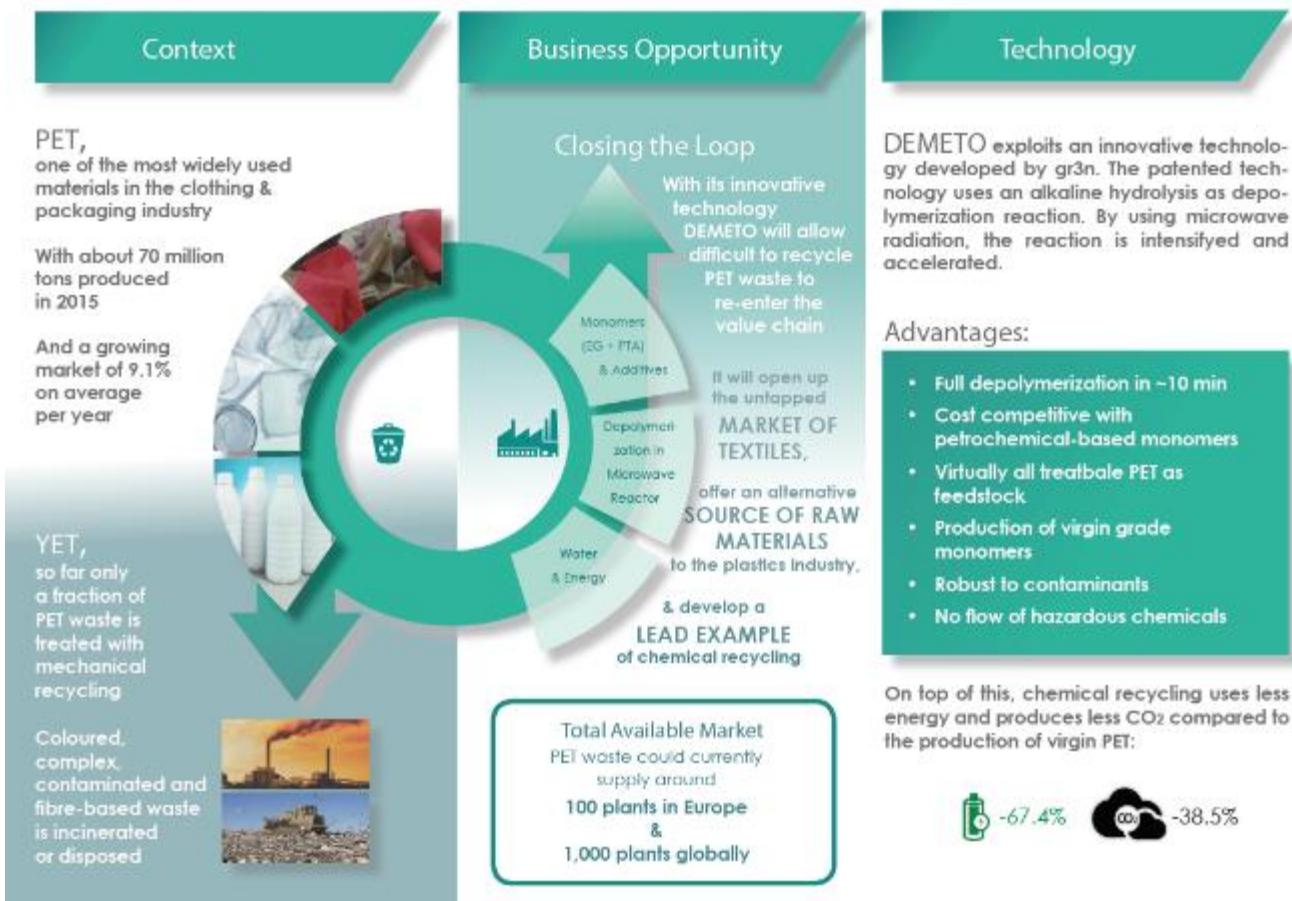
Stay updated and join the chemical recycling revolution at www.demeto.eu

Demeto Value Chain

Modular, scalable & high performance depolymerization by microwaves

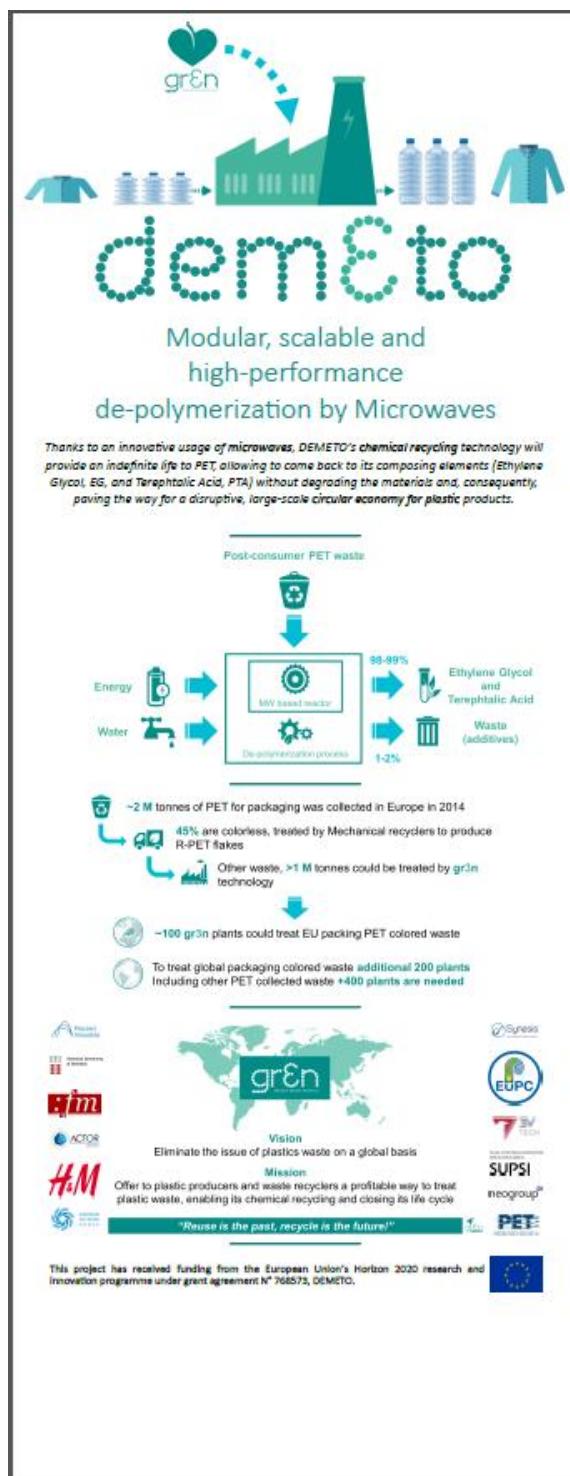
A sustainable, clean, safe and profitable way to recycle PET waste for a circular plastics economy

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 768573, DEMETO.



2.2 Banner

During the trade shows, the conferences and all DEMETO workshops a common banner is used. The banner summarizes the key facts of the project. Its design and layout is based on the official DEMETO logo.



2.3 General project presentation

The general DEMETO power point presentation was set-up in order to give a non-confidential overview of the background, the objectives and the structure of the project. The presentation is available on the DEMETO website and can be used by the members for communication purposes.



The slide features the DEMETO logo in the top left corner, which includes a stylized green factory icon and the word "dem&to". In the top right corner, there is a small blue square with the text "H2020" and "SPiRE 2020". Below these, a circular graphic shows a green heart-like shape above a factory icon, with a dashed arrow pointing from the heart to the factory. To the right of the factory are four blue water bottles. Below this graphic is the large, dotted word "dem&to". Underneath the word, the text reads: "Modular, scalable and high-performance DE-polymerization by MicrowavE TechnoloGy". The main title of the slide is "Changing the way PET is conceived: Introduction to the project", centered in large, bold, teal font. At the bottom left, there is a small green box containing the date "16/04/2018" and the text "DEMETO (H2020-SPiRE-09-2017 / Project Number: 768573)". At the bottom right, there is a small number "1".

Changing the way PET is conceived: Introduction to the project

16/04/2018 DEMETO (H2020-SPiRE-09-2017 / Project Number: 768573) 1



Why: gr3n vision and mission



gr3n is an innovation company that patented a disruptive technology providing a sustainable, clean, safe and profitable alternative to treat PET/polyester plastic waste



Vision

Eliminate the issue of PET/polyester plastic waste on a global basis



Mission

Offer to the society a profitable way to treat PET/polyester plastic waste, enabling its full circularity effectively closing its lifecycle and tackling the plastic waste issue

"Reuse is the past, recycle is the future!"



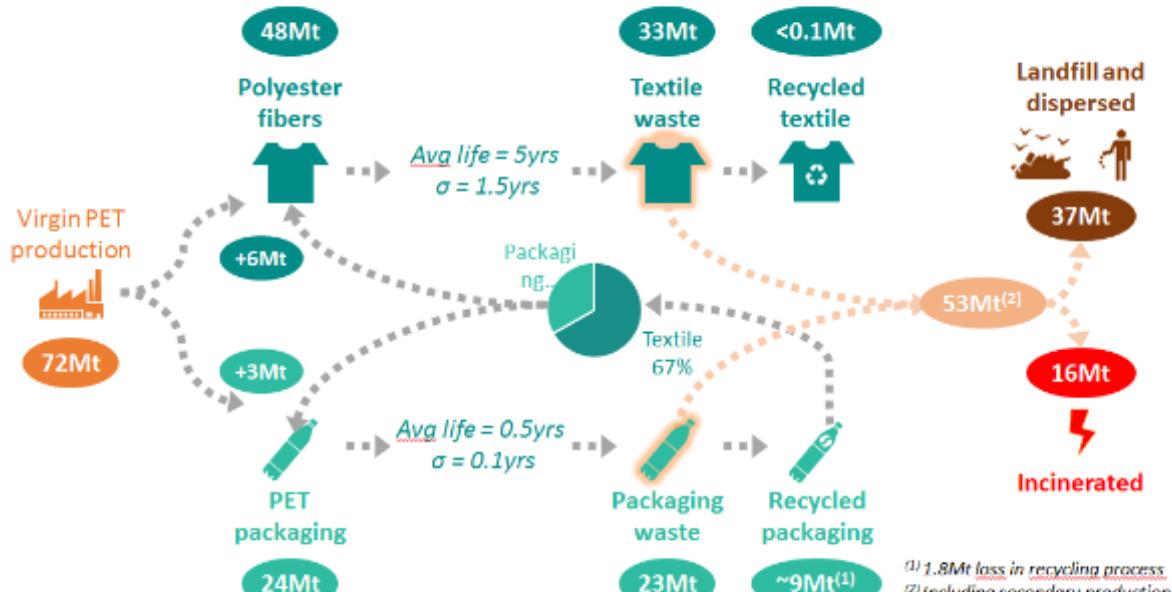
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Issue: PET plastic value-chain is not closed



16/04/2018

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Solution: gr3n patented technology



- gr3n enables the **chemical recycling of plastics**
- Full de-polymerization in approximately 10 minutes, allowing a **continuous process**
- Virtually all treatable PET as feedstock: ODR packaging, polyester, coupled plastics, ...
- **Virgin grade monomers** produced
- Purification process **robust to contaminants**
- **PET equivalent monomers cheaper** than petrochemical based

16/04/2018

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Who cares: plastics waste in the news



"Our goal is to **send zero waste to landfill**"
"100% **circularity**; go beyond recycling and completely **change the way fashion is made and used**."
"Since we launched our garment collecting initiative in 2013, we have gathered more than 22,000 tonnes
of garments to give them a new life – that's as much fabric as in 100 million t-shirts"

"Some of these projects involve developing "zero liquid discharge" plants to ensure optimum
recycling of water resources, and the creation of **production units for recycled plastic** to
secure supply source. Other circular economy projects are also in the pipeline."
"DANONE & VEOLIA IN SEARCH OF SOLUTIONS FOR PET RECYCLING IN INDONESIA"

**VEOLIA**

DANONE



"**Integrating recycled plastics into products can be very difficult** for manufacturers because
there is no strong market for these materials." "Growing number of reports about marine litter:
micro-plastics could enter the food chain." "Stepping up plastic waste prevention, preparation
for re-use, recycling and separate plastic waste collection, are all essential contributors to help
achieve 'zero plastic to landfill' and move to a circular economy"

"We call for a **landfill ban** of all recyclable and recoverable post-consumer waste by 2025,
aligned with modern sorting infrastructure and **improved recycling** and recovery in order to
exploit the fullest potential of this precious resource". "The **Circular Economy** is one of the
means of reaching this overarching objective"

PlasticsEurope

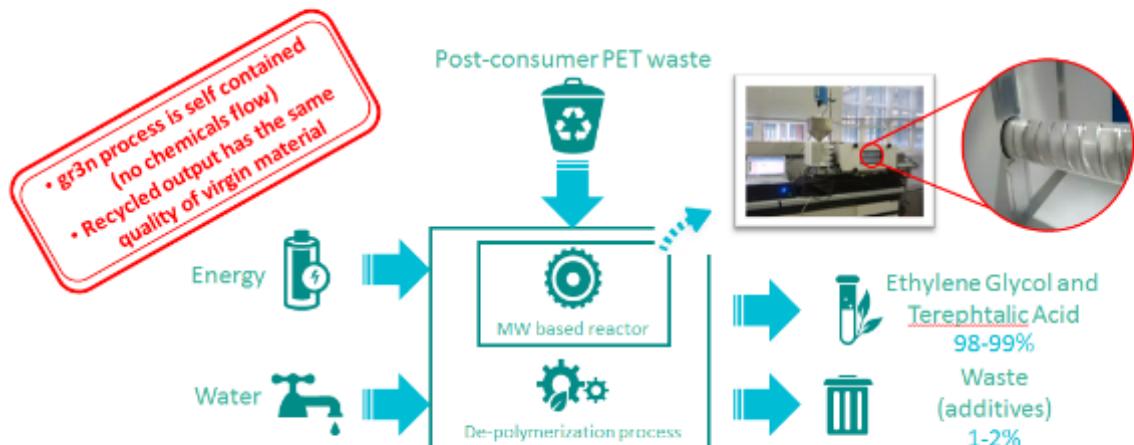
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How it works: microwave de-polymerization



- **DEMETO** (DEpolymerization by MicrowavE TechnoloGy), a patented technology, exploits the microwaves effect (rotational excitation of certain molecular groups) on plastics
- It only needs water and energy (NO flow of hazardous chemicals) in order to de-polymerize plastic, thus reducing it in its building blocks (monomers), ready to be re-introduced as virgin-grade material in plastics production

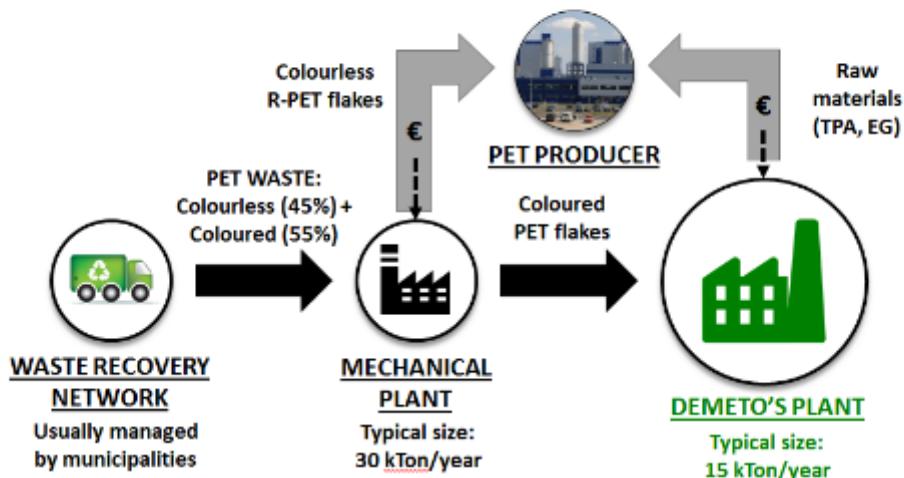
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Business case: closing the loop of PET market



Waste collection system for PET is already a well established market: some 40% of bottles are collected WW and almost 50% in Europe

Mechanical recyclers can profitably treat colorless bottles and sell them as R-PET flakes

More than half of the bottles collected are colored; plants would be paired with existing ones and treat profitably also colored, coupled PET and textiles

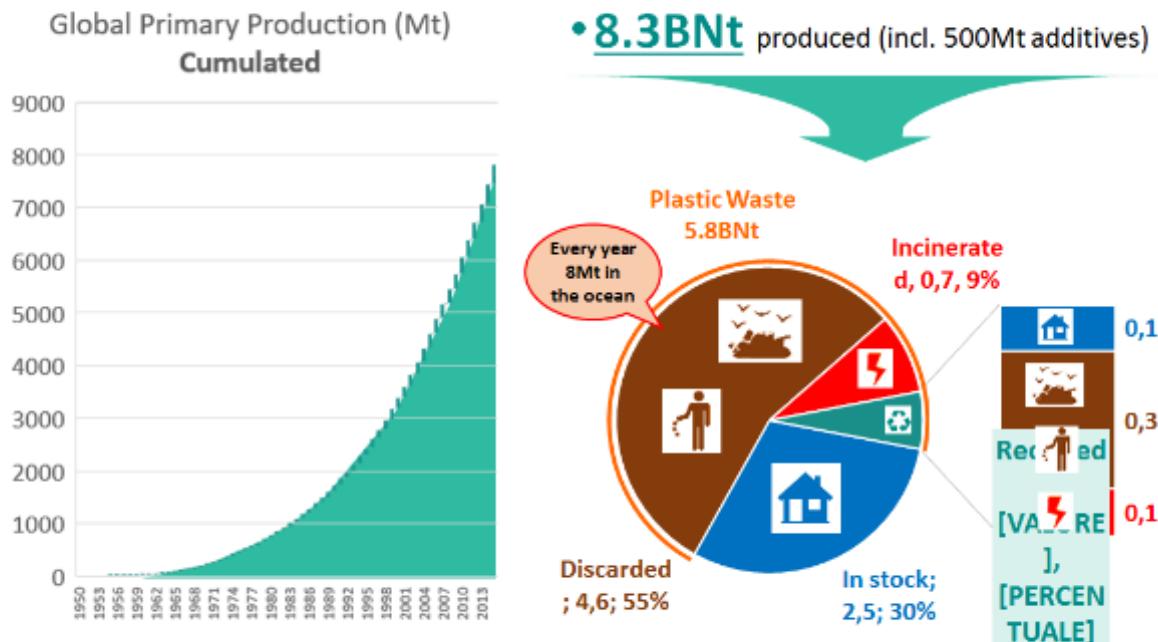
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Market: plastics, material of the 21st century



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Market: addressable market



1.9M tonnes of PET for packaging was collected in Europe in 2016



45% are colorless, treated by Mechanical recyclers to produce rPET flakes



Difficult to recycle PET packaging, >1M tonnes could be treated by DEM3TO technology



~100 DEM3TO plants could treat EU packaging PET difficult waste



To treat global packaging difficult waste **additional 400 plants** (6Mt)
Including other PET collected waste, and not yet collected waste (i.e. polyester garments), **+500 plants are needed** on a global basis

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Market: the target customers

	Rationale	Economical benefit
PET producers	<ul style="list-style-type: none"> Reduce Raw Material price Reduce oil&gas market volatility on supplying Obtain ready to polymerize material (compound) 	<ul style="list-style-type: none"> >100€/ton Doubling its spread
Mechanical recyclers	<ul style="list-style-type: none"> Ability to treat colored waste Ability to treat production scraps (PET powder) 	<ul style="list-style-type: none"> >100€/ton Enable profitable treatment of lower value fractions
Waste collectors	<ul style="list-style-type: none"> Diversify sources of revenues Integrate vertically one step of the value chain 	<ul style="list-style-type: none"> >100€/ton Enable profitable treatment of polyester
Sportswear brand	<ul style="list-style-type: none"> Reduce Raw Material price Ability to treat production scraps (polyester) Enhance brand equity 	<ul style="list-style-type: none"> >100€/ton Strengthening brand image

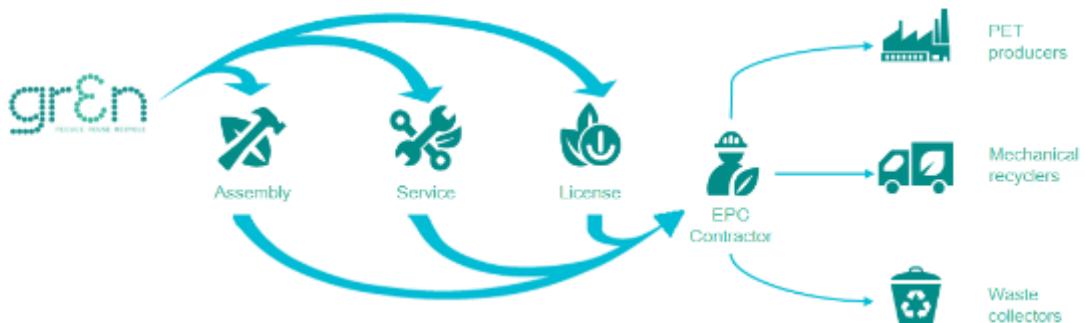
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Business Model: 3-tiered tech provider



- gr3n will continuously develop, assembly and sell microwave reactors
- Servicing of the installed base and licensing of the process will provide stream of revenues
- Microwave reactors are the core technology of recycling plant supplied by EPC contractors to future potential customers
- EPC contractor⁽¹⁾, PET producer⁽¹⁾ and Mechanical recycler⁽¹⁾ are key stakeholders during business deployment

⁽¹⁾All of them are part of DEMETO project and deeply involved in its market exploitation strategy

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Huge environmental and social impact

All LCA evaluations for DEMETO have been done using the **EcoInvent® Database**

Non-renewable energy requirements (NREFU) [MJ/kg _{PET} *]	66.3	21.6**
Global Warming Potential (GWP) [kg _{CO2} /kg _{PET}]	2.08	1.28
Acidification [kg _{SO2} /kg _{PET}]	0.00763	0.00571
Eutrophication [kg _{Po4} /kg _{PET}]	0.00225	0.00239
Abiotic depletion [kg _{Cr6+} /kg _{PET}]	6.72E-6	3.84E-6

*Reference Unit is kilograms of PET produced for Oil-based production, kilograms of PET recycled for chemical recycling.

**These are preliminary data based on current assumptions about the purification process.



-67.4%



-38.5%

(-88.9% considering landfill avoidance)

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gr3n timeline: DEMETO, last step before market



2011

LAB

- gr3nidea tested in LAB
- Batch process
- Patent

START-UP
Centro Promozione
Swiss Incubator

Enrolled in KTI program

2012-14

PRE-PILOT REACTOR

- Microwave reactor
- Continuous process
- Patent extension

START UP
2nd Italian place
SME Competitiveness
Promotion Center

Awarded KTI label

2015-18

PILOT PLANT

- Testing full scale line
- Horizon 2020 project
- 2M€ granted

CLEAN TECH OPEN
European finalist
SYMBIOTIMA
Horizon 2020 project

Awarded KTI label

2017-20

INDUSTRIAL PLANT

- Testing full scale plant
- Horizon 2020 project
- 10M€ project (8M€ granted)

gr3n
dem&to
Horizon 2020 project

16/04/2018

DEMETO (H2020-SPIRE-09-2017 Project Number 768579)

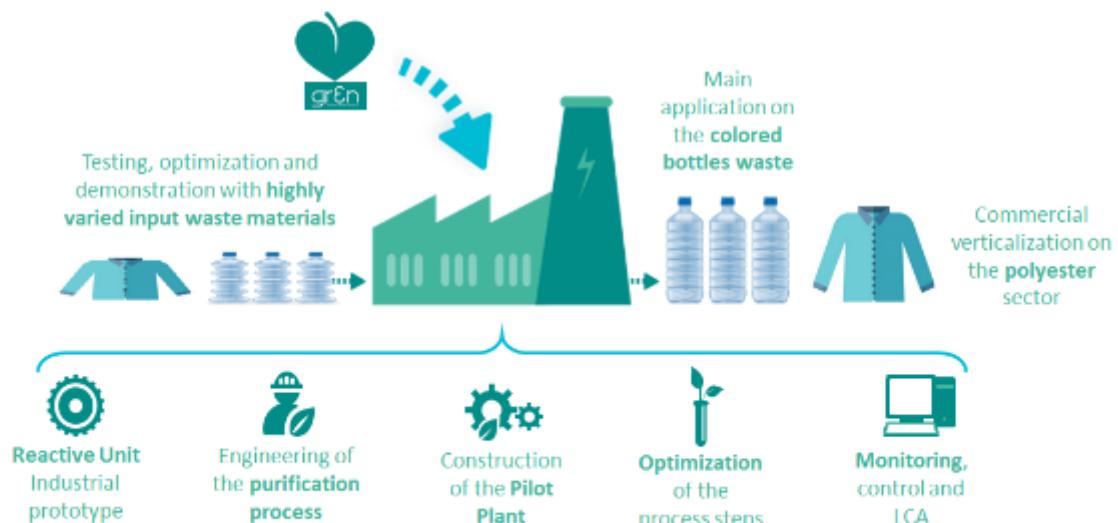
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DEMETO: the Horizon-2020 project

TECHNICAL OBJECTIVE: build a full and industrial-grade pilot plant of the de-polymerization process, having a green Reactive Unit at its core, while optimizing the purification steps.

STRATEGIC OBJECTIVE: exploit immediately the mature market of the packaging waste, while preparing the technology transfer to the huge and unexplored polyester/textile value chain.



16/04/2018

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DEMETO: the details

dem&to

<https://www.spire2030.eu/demeto>



EC Horizon2020 project: approved in April 2017



DEMETO has been granted €8M for the realization of the DEMO plant



Consortium involves all the relevant parties in the entire value chain:

EPCs



End users



NEOGROUP

Recycling cos



Equipment producers



Associations



Universities



16/04/2018

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DEMETO: the industrial partnership

	PARTNER	ROLE	TYPE
REACTIVE UNIT	SYNESIS	Engineering and construction of the Reactive Unit prototype	SME
	SUPSI	Modelling, simulation and optimization of the MW resonator	RTD
	FMMT	Design and realization of the MW generation and distribution	SME
PROCESSI INNOVATIVI	PROCESSI INNOVATIVI	Engineering, procurement and construction of the pilot plant	LE
	GR3N	Design of the optimal purification process	SME
PURIFICATION PROCESS	ACTOR-UK	Engineering of the process control system	SME
	DTU	Experimental testing and optimization of the purification steps	RTD
	3V-TECH	Design and construction of the Chlor-Alkali pilot unit	LE
END USERS	PETCIA	End-user representing the Mechanical Recyclers customer segment	SME
	NEOGROUP	End-user representing the PET Producers customer segment	LE
BUSINESS DEVELOPMENT	EUPC	Communication activities towards the packaging domain	SME
	EOG	Communication activities towards the textile domain	SME
	H&M	Design of the exploitation strategy for the textile domain	LE

16/04/2018

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2.4 Templates

In order to harmonize the external communication about the project, partners can download general templates in the internal repository of documents. Templates exist for the agenda, for deliverables and for presentations.

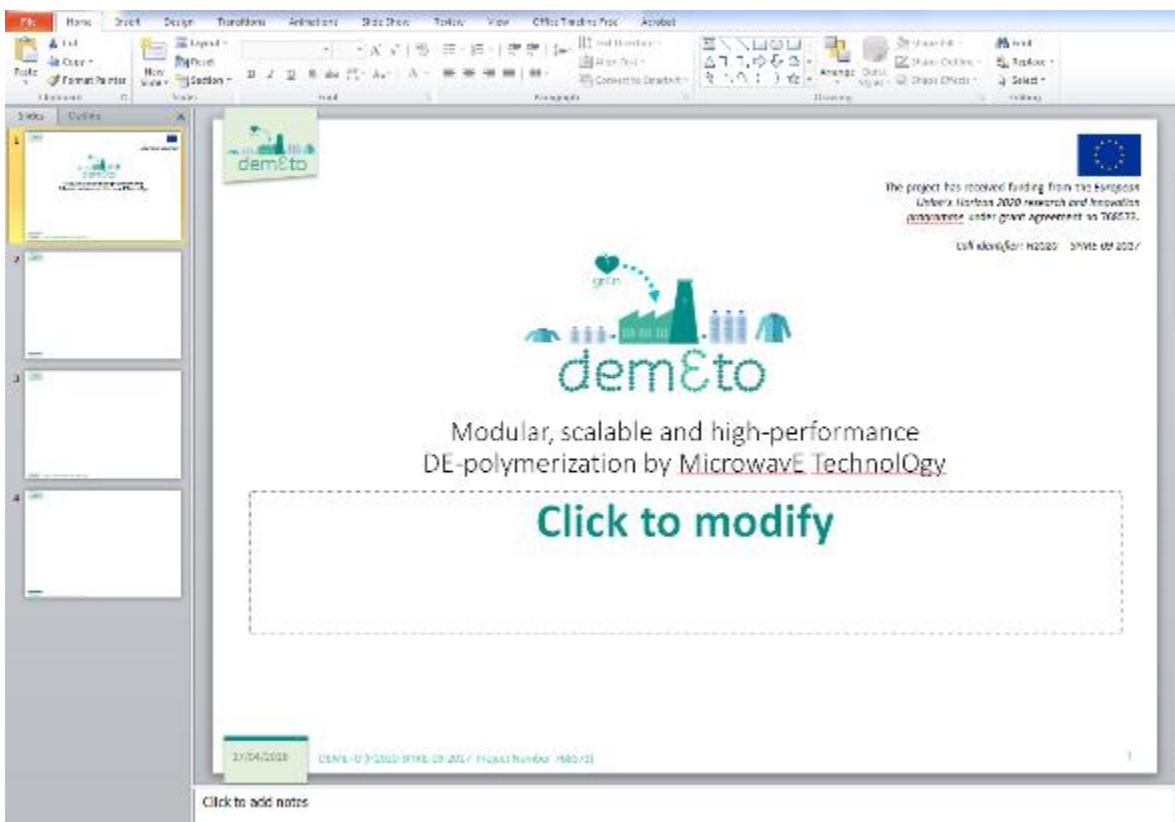
The image shows two Microsoft Word documents side-by-side. Both documents have a header featuring the European Union flag, the demEto logo, and the text "Modular, scalable and high-performance Di-polymerisation by Admixture technology".

Meeting agenda:

- Participants:** A table with columns for name, company, and participation.
- Agenda:** A table with columns for time, topic, and speaker.
- Meeting agenda details:** A table with rows for document title, location, date, author, and document version.

DOY:

- Table of Contents:** A table of contents listing sections such as Document history, List of abbreviations, Project summary, Project team, Structure, Content, References, and Acknowledgements.
- DOY details:** A table with rows for document title, document type (specifying document type: D1C / Deliverable, document title: demEto DOY / deliverable content: D1C phase 4, document version: v01 (2017)), workpackage, author, and delivery date (initial).



2.5 Press Releases

DEMETO has a press room accessible online <https://DEMETO.prezly.com> and linked to the press and members' data base of EuPC (more than 4.000 contacts).

2.5.1 Launch of the project

The first press release was published in September 2017 <https://DEMETO.prezly.com/launch-of-the-new-european-project-on-chemical-recycling-DEMETO> to announce the start of DEMETO and is available on the DEMETO website.

Launch of the new European Project on Chemical Recycling DEMETO DEMETO: modular, scalable and high-performance DE-polymerization by MicrowavE TechnolOgy

The new European project on chemical recycling DEMETO is officially launched. DEMETO aims at enabling chemical de-polymerization of PET at industrial scale based on its microwave-based process intensification, focusing as a start on coloured bottles waste.

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no 768573.

During its kick-off event at the end of September in Brussels, the consortium welcomed around 60 experts from the PET packaging and polyester industry and gave an insight into the DEMETO project, its technical foundation, economical aspects and role in a circular economy.

"DEMETO proposes the industrialisation and demonstration at full-scale of a new industrial process which allows to chemically recycle PET bottles, food containers and even textiles in a highly profitable and environmentally sustainable way," explained Maurizio Crippa, CEO of gr3n, during the event.

The core technology of DEMETO has been invented by his company gr3n to enable an effective process intensification of the depolymerisation reaction (hydrolysis) of plastic, from bottles as much as from any other source, leading it back to its building blocks (EG and PTA) and, consequently, allowing their full re-introduction directly at the virgin-grade production stage.

"DEMETO's technology, once successfully implemented, would allow to close the recycling loop for PET, with a potential impact on environment and society at large that would be enormous, introducing the concept of full circular economy in the plastic domain," added Franco Cavadini, CTO of Syntesis. The business exploitation strategy of DEMETO is based on a synergistic relationship between two industrial stakeholders: gr3n, as the manufacturer of the Reactive Units, and Processi Innovativi, as EPC contractor that builds the full-scale de-polymerisation plants. gr3n will supply Processi Innovativi with all the reactors needed to realise these plants required to cover progressively the total available market.

Presentations

All presentations of the DEMETO kick-off event are attached [here](#) for download.

Consortium Partners

The complete DEMETO Consortium includes ACTOR, DTU, European Outdoor Group, European Plastics Converters (EuPC), Fricke and Mallah GmbH, gr3n, H&M, NEOGROUP, Processi Innovativi, PETCIA, SUPSI, Syntesis, and 3V Tech.

Contact

2.5.2 DEMETO Newsletter February 2018

The second press release was published in February 2018 to advertise the newsletter and to inform about the latest developments concerning the project (see 2.7 for a complete overview of the newsletter).

2.5.3 DEMETO welcomes The Coca-Cola Company to its Industrial Advisory Board

The third press release was published in June 2018 <https://demeto.prezly.com/demeto-welcomes-the-coca-cola-company-to-its-industrial-advisory-board> to announce the participation of the Coca-Cola Company at the IAB of Demeto.



DEMETO welcomes The Coca-Cola Company to its Industrial Advisory Board

DEMETO, the chemical recycling project for PET, today announced that The Coca-Cola Company will join its Industrial Advisory Board.

DEMETO (Modular, reliable and high-performance DE-polymerization by Microbial Technology) is a European Project, funded by the European Community into the framework of the Horizon 2020. The partners of the consortium are working to bring a revolutionary new way to chemically recycle PET, invented by gr3n, which is both sustainable and profitable. The Industrial Advisory Board (IAB) of DEMETO is a committee of stakeholders external to the governance that will interact with the partners of the consortium to follow its public developments and, most of all, provide feedback and comments to steer the direction of its business development activities. The IAB consists of 10 companies involved in the complete PET polymer value chain at different level, including major brands of fast food, apparel, car, textile, instant coffee, home and personal care and cosmetics, as well as plastic converters, waste collectors and recyclers.

DEMETO and The Coca-Cola Company share a common interest in closing the loop of the Plastic Circular Economy. As one of the largest beverage producers worldwide, The Coca-Cola Company relies on PET in various applications, from transport to packaging, and has been long been recognized as an industry leader in supporting and advancing PET recycling.

Marco Luisa Poli, Technical Director, Coca-Cola Central and Eastern Europe said: "Consumers around the world expect companies like ours to be leaders and help reduce a long-term trend problem. Through our World Without Waste vision, we are investing to fully make the world's packaging waste solution a thing of the past. We will do this through a renewed focus on the entire packaging lifecycle – from raw material and cost savings design of end products, to how we can recycle and reprocess. Producing PET from recycled plastic is a sustainable and profitable way to an important step forward. That is why we are excited to work with DEMETO and the broader industry to help make sure revolutionary technologies available in support of a circular economy."

"As the main project coordinator and lead for the design and construction of the pilot plant, we are proud to work with The Coca-Cola Company in the DEMETO project," said Luciano Iagnemma, Project Executive Managing Director. "The Coca-Cola Company represents one of the largest users of PET in the world and we are very satisfied this project can extend the company's leadership in the

producing PET from recycled plastic is indeed an important step forward in environmental protection by the major players in this sector."

"We are thrilled to have the possibility to cooperate with The Coca-Cola Company, which has a public goal to use 50% recycled PET in its plastic packaging by 2020," said Massimo Crippa, Inventor of gr3n technology. "DEMETO's mission adds real regard to the present realization of the decade 2020."

By joining the advisory board of DEMETO, The Coca-Cola Company supports the first European project to build an industrial plant for chemical recycling of PET. Although PET is one of the most widely used materials in the packaging industry, only 20% of it is recycled and enters back into the value chain. Even in Europe, a large amount of PET waste (including crushed, complex and contaminated materials) ends up being unrecycled or disposed into landfill. Together with its partners, DEMETO addresses this challenge by introducing a clean, safe and profitable method to reuse difficult-to-recycle PET.

On the mechanical recycling, DEMETO's technology allows a complete recovery of PET without any degradation of the material. Thanks to its innovative technology, DEMETO will be able to obtain post-consumer PET and its key components, Bisphenol A (BPA) and Propylene Glycol (PTG). The process is enhanced by ultraviolet radiation to speed up the reaction time and to make it suitable for industrial application. Since the resulting PET is designed to be competitive to virgin PET in both quality and costs, DEMETO offers a serious alternative source of raw material to the plastics industry, and able to enable up to 100% recycled content in packaging of plastic cool drink containers.

2.5.4 DEMETO welcomes Kolon and Remondis to its Industrial Advisory Board

The fourth press release was published in May 2019 to announce the participation of Kolon and Remondis at the IAB of Demeto.



DEMETO welcomes Kolon and Remondis to its Industrial Advisory Board

DEMETO, the chemical recycling project for PET, today announced two new key members of its Industrial Advisory Board.

DEMETO (Modular, scalable and high-performance DE-polymerization by MicrowavE TechnoloGy) is a European Project financed by the European Community into the framework of the Horizon 2020. The partners of the consortium are working to bring to reality a revolutionary new way to chemically recycle PET, invented by gr3n, which is both sustainable and profitable.

The Industrial Advisory Board (IAB) of DEMETO is a committee of stakeholders external to the project that will interact with the partners of the Consortium to follow its public developments and, most of all, provide feedback and comments to steer the direction of its business development activities. The IAB consists of companies involved in the complete PET/polyester value chain at different level, including: top brands of home textile, sportswear textile, fashion textile, home and personal care and drinks, as well as plastic converters, waste collectors and recyclers.

"We are glad to welcome another two relevant companies to the DEMETO Industrial Advisory Board, which already includes several major players in the PET and polyester value chain. With its in-depth experience in the recycling sector, Remondis is a great addition in relation to the input side of DEMETO's value proposition, adding to experiences of SUEZ and A2A. The invaluable experience in the polyester textile and film production of Kolon will help us to validate the usage of the monomers obtained from our process in these applications. We look forward to add another brick in the wall of circular economy for PET and polyester", explains Matteo Bertele from gr3n.

The Kolon Industries, Inc. (Kolon) supplies PET based fibers, fabrics and films for various applications. As the need for a sustainable polymer supply from the environmental friendliness stand-point becomes greater due to climate change, Kolon's key strategy is to enable a Sustainable Polymer Economy (SPE) to satisfy the need. SPE is a concept with which no polymer enters the landfill, ultimately, with the initial polymer target being polyesters, to minimize environmental impact. One of the key aspects of this concept is chemical regeneration and recycling of polymers.

DEMETO enables various companies in the polyester supply chain to collaborate to find a best sustainable solution to a global polyester waste problem. In this regard, Kolon is happy to support the DEMETO project with the aim of eliminating polyester waste and to support the enablement of sustainable polyester economy.

"We at Kolon are honored to be asked to participate in the DEMETO project as a board member of the IAB. We believe the objectives of the project align very well with Kolon's objective of enabling SPE, especially in a key area of polyester depolymerization. Furthermore, the success of DEMETO project would ensure that our planet would be a safer and healthier place", explains Sung Han, Executive Vice President and CTO of Kolon.

REMONDIS is well known for its innovative recycling operations, driven by its mission to promote sustainable development. Both the company's slogan "REMONDIS – working for the future" and the wide range of business activities reflect the determination to assume responsibility and develop innovative recycling technologies that can supply recycled resources to primary industries. All of REMONDIS investments contribute towards creating a truly circular economy.

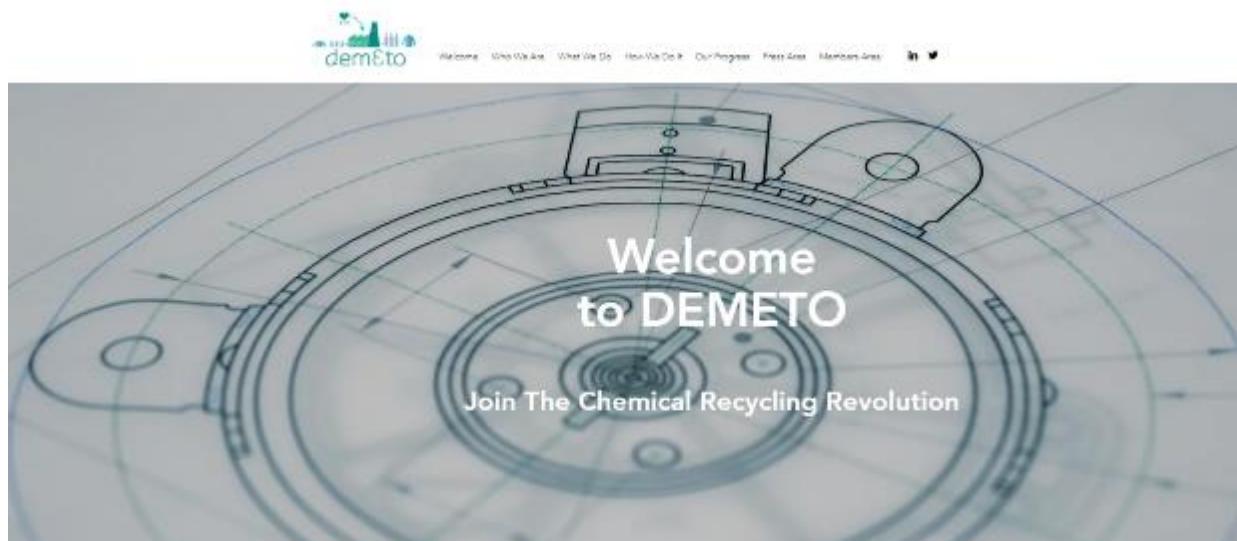
"To be able to pursue this goal, we have also integrated the chemical recycling of plastics into our recycling portfolio. We are constantly looking for innovations that not only use groundbreaking technology but that are also both environmentally sound and economically viable – such as the DEMETO technology. We are excited to have joined the industrial advisory board and to observe the development of a cutting-edge recycling technology," says Pailak Mzikian from REMONDIS.

2.6 Website

The project website is one of the main communication tools of EU funded projects. It provides easy and quick access to the project results for a wide audience.

The main project website of DEMETO is available at <https://www.DEMETO.eu> and is updated on a regular basis with the latest results and news concerning the project. The website provides information about the project's partners, objectives and planning as well as documents for press work and internal communication.

- Welcome page



The homepage of the DEMETO website samples the most important information about the project. Both design and layout are based on the colour and style of the DEMETO logo and are maintained throughout the website. The menu at the top of the page features the sections “Welcome”, “Who We Are”, “What We Do”, “How We Do It”, “Our Progress”, “Press Area” and “Members Area” which link to the other pages of the site.

Another menu at the middle of the page includes the categories “Our Partners”, “Our Mission”, “Our Project” as well as “News & Events” which link to the corresponding information on the website. The menu makes it easy to navigate the website and to access specific information about the project starting from the homepage.

The newsfeed below the menu provides a snapshot of the most current news and events. It automatically displays the most recent blog entries of the websites’ news section. The newsfeed provides a shortcut to the most relevant articles. A comprehensive overview of all DEMETO updates is placed on the page “Our Progress”.

The screenshot shows the DEMETO homepage with a green header. The header contains the text "Modular, Scalable and High-Performance Depolymerization by Microwave Technology". Below the header is a navigation menu with four items: "Our Partners", "Our Mission", "Our Project", and "News & Events". Each item has a small icon above it. Below the menu is a section titled "Follow our Progress" with several news items. One news item is from "dem&to" dated February 25, 2019. Another is from "PFTGIA" dated February 19, 2019. A third is from "EUROPE OUTDOOR GROUP" dated February 18, 2019.

In addition to the newsfeed the homepage features a twitter feed with the most recent DEMETO activities on social media. The feed automatically shows relevant tweets which include the DEMETO hashtag (#DEMETO).

Furthermore, the social bars at the top and the bottom of the page directly link to DEMETO’s social media profiles on twitter and LinkedIn. They appear on each page of the website and increase the visibility of the social media activities (see 3.8 for an overview of DEMETO’s social media activities).

At the bottom of the homepage visitors have the possibility to subscribe to the DEMETO newsletter and to contact DEMETO via a given contact form. Any visitor can directly get in touch with DEMETO via the website and can expect an individual answer by a DEMETO partner.

The footer of the website includes the funding details using the following specific sentence: “The research project DEMETO receives funding from the European Community’s Framework Programme for Research and Innovation Horizon 2020 (2014-2020) under grant agreement no. 768573”.

Subscribe to Our Newsletter

Name Email Address

Contact

Fill out the contact form below or write us an email at
info@demeto.eu

Email * Name *
Subject
Message



The research project DEMETO receives funding from the European Union's Framework Programme for Research and Innovation Horizon 2020 (2014-2020) under grant agreement no. 768573.

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• Who We Are

The page “Who We Are” includes an overview and a short presentation of all the DEMETO partners. The page can be accessed via the main menu and the “Our Partners” section on the homepage.

The top of the page features several quotes from DEMETO project partners which illustrate their interest in the project. The project and the project partners are described in a short section below the quotes. A related map shows the spread of the DEMETO partners across Europe.

At the bottom of the page each company is presented in an individual paragraph. The logos are displayed next to each paragraph and link to the companies’ website for further information.

Who We Are



"To fulfill our vision of 100% circularity, we must develop technologies to keep materials and their constituents within a continuous regenerative cycle of use & reuse."

DEMETO is a revolutionary new way to chemically recycle PET in a highly profitable and environmentally sustainable way. DEMETO will enable the chemical depolymerisation of PET at industrial scale thanks to its microwave-based process intensification.

DEMETO is a European Project and has received funding from the European Union's Horizon 2020 research and innovation programme. The 13 partners that form the DEMETO consortium are from all over Europe and share the common vision that DEMETO will help to create a more sustainable world.



Combining process and engineering know-how with its manufacturing capabilities, 3V TECH is one of the most advanced providers of process solutions and process equipment in the market, being capable of supporting all R&D-to-industrialization project thanks to state-of-the-art pilot plants at its center, specially equipped for testing in the field of batch, rotation & drying, evaporation, crystallization, distillation and drying of highly-viscous products and wet Colloids.



ACTOR is a company specialized in the consulting, design and implementation of advanced control systems for the process industry or sectors that may need the upper limits of reliability performance. It is a solution manager to the following specific competencies: Technical specification for migration projects and follow-up on investments on new DCS - Distributed Control Systems; DCS architectural management; network design; logical schematics building for process automation and control while collecting technical specifications; DCS projects management (e.g. time, costs, team) while meeting contractual requirements; testing (e.g. FAT, Factory Acceptance Test); commissioning and start-up (e.g. SAT, Site Acceptance Test).



Within DTU University in Denmark, a department is specifically focused on the engineering of advanced chemical and biochemical processes, working closely with industry to obtain research results that are applicable to industry and society. In DEMETO, the so-called "Pilot Plant" research group will be specifically involved in the activities of the project, thanks to its extended experience focusing on unit operations, reactor engineering, process control, process and plant design, instrumentation, automation and industrial measuring technology, but also topics such as scale-up and scale-down and synthesis of continuous processes.



The European Outdoor Group is an association that aims to represent the common interests of the European outdoor industry. It was founded in 2000 by 17 of the world's largest companies, who accepted the need for a voice, since there was no opportunity to represent all of the outdoor sector. This world of increasing interconnection, education, environment, the media and trade are all now embodied by EOG. The association currently has 45 members, and a close cooperation with national outdoor associations, provides EOG with an extremely powerful force to represent the European outdoor industry's common interests and concerns.



EUPC is the leading EU-level trade association, based in Brussels, representing European plasma processing companies. EUPC works about 6000 companies in Europe, plasma processing industry associations and represents more than 50,000 companies producing over 80 million tons of plasma products every year. The European plasma industry makes a significant contribution to the welfare of Europe by adding innovation, creating jobs, creating and retaining resource efficiency and job opportunities. More than 15000 people are working in EU plasma processing companies (EUPE) to create a turnover in excess of 200 billion per year.



The Fuchs + Mahr GmbH, founded in 1990, is one of the leading German suppliers of microwave and far-infrared generators in the field of microwaves and plasma. F+M has machines with a power between 600 kW and 1 MW. Their main application for the users are found in electronics, ceramics, wood, food, pharmaceutical and chemical industry. To make the microwave application last, after the development, test of the users are accompanied by a close dialogue with the customer. The used microwave generators and antennae are from own production and designed for microwave powers up to 20 MW. They are also supplied to several other manufacturers in Europe and USA. A further activity is the development of power electronics and microwave measurement equipment.



grEn company is composed by the inventors and owners of the co-polymerization technology (and of its patent), and they are the scientific core of DEMETO. Fading the industrialisation part of their innovative project since very low TRL and towards market acceptance, the team of grEn is composed by a varied set of competences: strong experience in the materials chemistry and design; chemical processing conception and design; industrial and business oriented focus to sustain the whole business modeling of the company.



H&M Hennes & Mauritz AB is a Swedish multinational clothing-retail company, known for its fashion clothing for men, women, teenagers and children. H&M and its associated brands operate in 65 countries with over 4,000 stores and, as of 2013, employ around 132,000 people. It is the second largest global clothing retailer, just behind Spain-based Inditex (parent company of Zara). Strongly committed to the life-cycle sustainability of its products (H&M's stores have collected more than 34,000 tonnes of clothing for reuse and recycling since 2013), the company has been investigating for several years different potential approaches to a more effective recycling of polyesters.



NEDERGROUP is one of the biggest manufacturers of polyethylene terephthalate (PET) granules in Europe, located in Ukraine near the Black Sea port. Over 300 thousand tons which comprise 12 per cent of the European production are produced annually during a year.



DEMETO is a PET mechanical recycling plant that produces PET fiber recycled from post-consumers PET bottles/waste collected from Spanish municipal bins, being an integral stakeholder of the local post-consumer recycling network and also because of its being part of a European group of other equivalent companies in other Countries. PETCIA is the perfect addition improving the other recycling customer segments for DEMETO's depolymerization technology.



Processi Innovativi, a company owned by KTC - Kinetics Technology, provides process services for the chemical, petrochemical, oil & gas, and environment and energy industries, recycling non-renewable materials through high-quality technical consulting services. Processi Innovativi has a team of experts ready to work for developing next generation technologies to offer new products to the market, to increase productivity, competitive quality and to improve the end results.

Based on the innovative development of a chemical process, the industrial role of PET is the key to move from a conceptual/experimental stage to a proper structural scheme, the first step to turn an innovation project into a real business opportunity and determine the necessary investment and expected return.



RECPRENDI follows the vision of a Circular Textile & Polyester Industry in Europe. The organization is focused on the innovative recycling of textile and footwear waste as well as the connection of value chain in a circular business models. The expression RECPRENDI is based on "via verde para reciclar", which means green road. The green path for you clothing.

Scuola universitaria professionale della Svizzera italiana



Thanks to application-based development methodologies based on simulation and on the commerce availability of electronic components operating at higher frequencies and with a higher degree of integration, the necessary for "ultra-low latency and High Frequency of RF MEMS". In line with the current market needs and through a series of solid solutions future developments, others applied research in favor of small and medium enterprises SMEs in the field of wireless and wireless telecommunication and radio frequency systems and electronic systems.



As a research technology transfer and company support in supporting both startup and SMEs in bringing innovative solutions to the market, Synesis brings to DEMETO the following competencies: Conception and design of advanced mechanisms, systems and machines. Development of optimal control techniques for mechatronics, robotics and automation. Modelling and design of simulation for robotic and other commercial processes. Synthesis and design of low-cost automated methodologies and tools for manufacturing with powder industry, soft practice and complex driven. Design of innovative business models for technological products and design of future developing.



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- What We Do

The page “What We Do” offers more detailed information about the objectives of the project. It can be accessed via the main menu and the “Our Mission” section on the homepage.

Several short paragraphs and matching diagrams at the top of the page explain the shortcomings of the PET market and how DEMETO is addressing the challenges. Below, the prospect of DEMETO is summarized as a way to close the PET value chain through a circular economy approach thereby reducing the dependency from natural resources and improving the environmental footprint of PET production.

The objectives of DEMETO are presented in an easy and accessible way. They are divided into the technical objective to build a pilot plant of the de-polymerization process, the strategic objective to exploit the market of packaging waste and preparing the technology transfer to the polyester/textile value chain, and the environmental objective to reduce the environmental footprint of PET production and usage by more than 50%.

A general power point presentation about the project is placed at the bottom of the website giving detailed background information about the project (see 3.6 for a complete overview of the general presentation).

What We Do

Our Vision

Become the most competitive entity on a global basis.

Our Mission

Offer plastic producers and waste recyclers a profitable way to treat plastic waste, enabling its chemical recycling and closing its life cycle.



Nonetheless, Polyethylene Terephthalate (PET)-based waste materials are mainly treated by means of mechanical processes. Around 15% of the plastic solid waste (PSW) for recycling is due to the degradation and fragmentation of PET. Only a few oligo-polymer polymers can be processed, thus reducing all of the more complex and contaminated waste. Usually, it is the main issue when dealing with mechanically recycled products, which, in the end, could just be burned or landfilled.



The Prospect of DEMETO

The Objectives of DEMETO

With the purpose of establishing a competitive feedback loop, within the PTT network, directly "from agent to agent", allowing to compare the own implemented strategy in PTT, PTF or PTI against business approach of its direct competitor.

The most stage-individuality by the parent, enables the rearing of many stages of the parents for the plater species that has the problem of strong competition between mainly young adults, especially when immature predation from field had been eliminated because of water in the EPT.

or who holds the power you will be recycling.

STRATEGIC OBJECTIVE:
Develop and demonstrate pilot plant of the depolymerization process, having a yield greater than 90% and a specific energy consumption of less than 10 kWh/t.

- How We Do It

The page “How We Do It” gives a more detailed insight into the planning and structure of the project as well as further technical background information about the de-polymerization process. The page can be accessed via the main menu and the “Our Project” section on the homepage.

It includes a timeline from 2011 until 2020 with the most relevant steps of the project. In addition to this, two short paragraphs and matching diagrams explain DEMETO's technology to improve the purification process of PTA.

DEMETO has placed an overview of its 36-month work plan at the bottom of the page. This way, visitors can easily identify the different stages of the project.

How We Do It

Road to DEMETO



DEMETO's Core Reactor

DEMETO's core reactor is designed to support the Process Integration of the chemical recycling reaction. The potentialities of PFT are used to increase the efficiency of the reaction. At the same time, DEMETO is able to reduce costs due to the simplicity of the combustion stage of PFT, while ensuring a recycling through a continuous process limited to the heterogeneity cell of the reactor.



DEMETO's Core Concept

Based on the industrial and technical know-how of the partners involved, DEMETO's core concept is the adoption of a full process approach that, combining all the best available technologies, will allow the conversion of the most relevant post-combustion biomass residues, such as lignocellulosic biomass, into high-grade E85 and PTA for markets, with genuine effects, feedstock for the overall demonstration purposes.

DEMETO's Approach

In order to guarantee the systematic development and dissemination, DEMETO management has a common 20-month work plan. This plan is divided into three main phases: Phase 1: Project setup (W1-W7), dedicated to project management and WPP to institutions and environment; while the W8-W14 are dedicated to the definition of the plant design; Phase 2: Implement the project (W15-W20); and Phase 3: Exploit and validate the technology (W21-W26). The last phase is dedicated to the validation of the plant design and WPP, specifically devoted to the dissemination of the project approach effectiveness.



• Our Progress

All of DEMETO's news and events are published on the page "Our Progress". The blog entries (more than 30) are updated regularly and inform the reader about the current state of the project. The three most recent blog entries are displayed additionally at the news feed of the welcome page.

Blog entries of the past included the announcement of the newsletter, information about IAB meetings and reports about relevant conferences with DEMETO participation. Each article provides useful background information and helpful links for further information.



Our Progress

DEMETO Update

Newsletter February 2019

25 Feb 2019



Follow the latest news of the EU Horizon 2020 project DEMETO. This is the February 2019 Newsletter. Please download the PDF version [here](#).

[Read More](#)

DEMETO Update

PETCIA

19 Feb 2019



PETCIA (PET Compañía para su reciclado) is a specialised PET sorting and recycling company that belongs to Dentis Group, one of the main European players for mechanically recycled PET. Their mechanical recycling process consists in several steps: bales breaking, bottles pre-washing, grinding, washin...

[Read More](#)

Events & Workshops



Demeto 12th Month Consortium Meeting
13 Nov 2018



Circular PET main topic at ICIS conference
23 Mar 2018



Demeto invited to the EUPC Annual Meeting 2018
20 Feb 2018

Featured



Newsletter February 2019
25 Feb 2019



DEMETO Video Published
3 Sep 2018

Public Deliverables



DEMETO Public Deliverables 9.1 & 9.2
28 Jan 2019

DEMETO Update

Sustainable Textile and Fashion Value Chains - European Outdoor Group

18 Feb 2019



In early 2019, members of the DEMETO project submitted a contribution to the Springer Publication 'Achieving a new circular textiles economy thanks to breakthrough technology innovation'. The chapter entitled 'Sustainable End-of-Life Concepts and Strategies in the Textile and Fashion Industry' conta...

[Read More](#)

DEMETO Update

NEO GROUP

15 Feb 2019



NEO GROUP is a team of very curious and innovative people, so

- Press Area

The page “Press Area” offers documents which can be used for external communication. The documents available for download are: the official logo, the general presentation, the DEMETO newsletter and the press releases. At the bottom of the page visitors can directly get in touch with DEMETO via a given press contact form.

Press Area

About Demeto

The recycling of PET is a two-step process. It consists of several steps that are fixed in time between different companies across the European and worldwide value chain at the end of that life cycle that DEMETO proposes as innovative technology. The final objective and sustainable business model, the recycling and reuse of end-of-life PET bottles, is to reduce the negative environmental impact of PET waste. This will be achieved by a more efficient and cleaner recycling process. In this way, DEMETO's recycling technology will prevent an increase in the amount of PET, allowing it to come back to its original elements (Olefine, Glycol, CO₂ and Terephthalic Acid, PTA) without degrading the materials and, consequently, making the way for a complete, regenerative circular economy for plastic products.

Downloads

[General Presentation](#)

[Logo](#)

Press Contact

Pressroom

Visit the [DEMETO Pressroom](#) to receive our latest press releases.

- Members Area

The member’s area of the DEMETO website is dedicated to the members of the IAB and is used for internal communication. In the members area IAB members have access to internal documents of previous workshops (see 2.8.1 for a complete overview of the materials drafted for the workshops)

Members Area

IAB Members, IAB Meeting 9/2/2018, DEMETO Circular Economy
Workshop, policy and dual innovation, new study results and
new scientific publications. Visit the library!

IAB Meeting 9/2/2018

Read Date: 10/09/2018 | Download: 10/09/2018 | Print: 10/09/2018

IAB Meeting 28/9/2017

Read Date: 10/09/2017 | Download: 10/09/2017 | Print: 10/09/2017

2.7 E-Newsletter

In coordination with all project partners DEMETO has published three e-newsletter in [February 2018](#), [September 2018](#) and [February 2019](#). The newsletters inform about the current state of the project as well as about events and conferences with DEMETO participation.

It was distributed to the IAB members, to interested stakeholders and to other organizations that previously registered on the DEMETO website. The newsletter is regularly updated and a new version will be available in September 2019.



Today it's hard to imagine a world without PET. We drink from it, we eat from it, we sleep in it, we wear it... But every aspect of the products we're using requires energy. Check out the [Circular PET products and ideas](#).

Watch the video



The Industrial Advisory Board of Dem&to – experts from the entire value chain

Dem&to does not only consist of innovation partners from the entire value chain. In order to get the most out of the Horizon 2020 project the partners are supported by an Industrial Advisory Board that provides feedback and comments to steer the development of the project. The Industrial Advisory Board consists of brands of home textile, garment recycling, fashion media, name and brand care as well as raw material converters and recyclers: A2A, ALPIA, Coca-Cola, Dow, ECOPLAST, Fettecare, Impact, Logoplaste, MAKSC, OVS, SUEZ, SOEX, SOEX, Waste2Wear.



Coca-Cola joins the lab of Dem&to

On June 28 Coca-Cola officially joined the lab of Dem&to to help bringing to reality a revolutionary new way to chemically recycle PET bottles. The Coca-Cola Company share a common mission in closing the loop of the Plastic Circular Economy. As one of the largest beverage producers worldwide, The Coca-Cola Company sees an PET as a valuable resource, and is anxious to package and has been long been recognized as an industry leader in supporting and enabling PET recycling.

"Introducing PET! From recycled plastic in a water bottle to polyester fabric in an important car interior. There is a fully circular solution for waste-to-waste PET and it's time to move forward. This is a great example of what's possible, available in support of a circular economy."

Marko Salua PhD, Technical Director, Coca-Cola Latin America Europe



Dem&to, a potential game changer for the outdoor industry?

The outdoor industry is an enormous user of polyester, with the majority of outer layer garments (jackets and trousers) being made from 100% polyester or polyester blends, and the fibre also being found in waistbands in base and insulation layers, as well as accessories (gloves, socks, hats, etc.).

The European Outdoor Group (EOG), an industry association that represents outdoor brands, retailers and technology leaders, decided to become involved in the Dem&to project as the technology promises to offer a number of advantages over existing recycling technologies that could facilitate brands' attempts to shift towards using more recycled fibres, and developing systems to deal with post-consumer waste in order to be part of a circular economy.

Since increasing involvement in the project, the EOG has organized a number of events with its members discussing the technology and its potential and has recruited a number of experts from EOG members, as well as other stakeholders, who are really interested in the technology. [Read more](#)



Polyester textiles as feedstock for Dem&to

Recuprenda's mission is to assist in the creation of circularity in the textile & footwear industry in Europe by acting as a central connector and linking old textiles, brands, manufacturers and consumers. Every year millions of tonnes are discarded every year with York having as a destination landfill or incinerator. However, the majority of the textile waste could be recovered to recycle or reuse it.

Dem&to's technology makes it possible to save polyester resources and turn used textiles into valuable material for the industry. As part of the project, Recuprenda will work on pilot projects, adjusting criteria for different types of clothes. Together with the other spin-offs of the project Recuprenda will therefore test the recycling process of post-consumer polyester into secondary raw material. [Read more](#)



Advancements in Dem&to's reactor design

The depolymerization process of DEMETO occurs in the reactor. There, the chemical reaction is initiated and accelerated by microwaves (MW) that act as a sort of catalyst effect. A better functioning of the MW field allows an increase of flow of the processed materials, thus a faster reactor and a shorter time is one of the critical aspects in the task of CDTU's leading role within the DEMETO project.

CDTU is working on reactor modification and optimization of DEMETO, CDTU and PSLB in order to achieve an industrial-scale reactor. The main target is to increase the quality of the output polymer and reduce the energy consumption of the reactor, maintaining system availability according to the project requirements. This task is particularly challenging due to the technical and economic goals. [Read more](#)



Dem&to part of H&M's sustainability programme

In 2016 H&M launched its sustainability report 2017 in which the company took out its project Dem&to. A circular economy initiative, H&M has chosen to implement Dem&to in 2017, with the aim of creating a sustainable future for the planet. In order to achieve this goal the company focuses on this key message when its issue: A. Design, B. Material source, C. Production processes, D. Product use, E. Product reuse and recycling.

The change starts now & start reuse recycling solutions for many types of textiles – especially textile fibers – that have not been recycled yet or are not currently available at scale. This is very important in 2017, among other projects, Dem&to "recycling old recycling polyester fibres into new fibres without compromising quality". [Read more](#)

Dem&to at IROS conference

From 21 - 24 March 2018 experts from the PET industry gathered in Amsterdam for the first international conference on PET recycling. The conference focused on the recycling of PET bottles and PET containers. More than 100 experts from all over the world attended the event. The conference took place without the participation of Dem&to representatives.

Alfonso López (co-founder of the project) from gplc had the honour to participate in a panel discussion about chemical recycling during the closing round-table "Recycling Trends: New approaches, chemical recycling, for example in the field of PET recycling". Alfonso López is also more focused to direct his time and can offer the industry to consider.



Dem&to at Economo conference

From 6-8 November 2018, business – the leading green apparel and textile companies in Europe – will take place in the Forum Regio center (Italy) with more than 100,000 attendees.

At Dem&to is at the heart of the circular economy in garment recycling. Dem&to is a unique and innovative technology developed in 2010 to produce PET from chemical recycling technology and to network with like-minded persons from other projects and organizations aiming for circularity.



A Circular Future with Plasticic: Dem&to presented in Milan

On 24 and 25 May 2018 RUCF and Unilever organized the event "A Circular Future with Plasticic" in Milan, Italy. The event gathered European Plastic recyclers, raw and recycled economics, recycling processes and trends in Milan. The two-day event consisted of numerous speakers and encouraging experiences.

The final day of the event started with the Packaging section – to introduce Packaging Manager Carlo Cicali took the stage to present the Dem&to project. In more or more than 150 visitors attended the conference.



Dem&to at Economo

On 6-8 November 2018, business – the leading green apparel and textile companies in Europe – will take place in the Forum Regio center (Italy) with more than 100,000 attendees.

At Dem&to is at the heart of the circular economy in garment recycling. Dem&to is a unique and innovative technology developed in 2010 to produce PET from chemical recycling technology and to network with like-minded persons from other projects and organizations aiming for circularity.

Afterwards the speaker and as well as the Dem&to pilot plant were discussed in detail. At the same time a parallel business session focuses on business development and strategic activities.



Coming up...

10/2018 Internal Consortium Meeting
01/2019 Scientific Dissemination Workshops

dem&to

Av. de Colmenar 70
1200 Madrid - Spain
<http://www.demeto.eu>
www.demeto.eu

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 786073 - DEMETO.





Newsletter February 2019



Today it is hard to imagine a world without PET. We drink from it, we eat from it, we wear it. Not only some of the products are being recycled, let's dive the topic. Check out the new demEto [brochure](#) [\[here\]](#).

[Watch the video](#)

The Industrial Advisory Board of DEMETO – experts from the entire value chain

DEMETO does not only consist of consortium partners from the entire value chain. In order to get the most out of the Horizon 2020 project, the partners are supported by an Industrial Advisory Board that provides feedback and consultancy to steer the direction of DEMETO's business development activities. The IAB consists of top brands of home textiles, sportswear/textile, fashion textile, home and personal care and drinks, as well as plastic, cosmetics, detergents, refiners and recycling experts: AEMI, ALPA, AVEO-CAT, EIT Raw Materials, Envia, Lopoglatec, MASCIC, SUEZ, Unilever, OVS, Recycle Europe, SEFEA IMPACT, SOEX, Siemens, Suez, Unilever and Waste2Wear.



DEMETO consortium partner grise wins the 2018 Innovation Radar Prize

The European Commission has awarded Europe's most promising digital innovations emerging from EU funded research and innovative projects. DEMETO consortium partner grise, from Switzerland, won the 2018 Innovation Radar Prize for their breakthrough technology for "upcycling" PET / polymer. The award ceremony took place at the European Commission's ICT 2018 in Vienna, Austria on 6 December.

The 2018 Innovation Radar Prize has been awarded to grise (pronounced "green") for their breakthrough technology for "upcycling" PET / polymer. They have developed an industrial grade prototype that uses microwave radiation to increase the proportion of plastics that can be recycled while also increasing the quality of recycled plastics (such as PET and polymers). Grise is a Swiss company although Switzerland is not a EU Member State. Basic researchers and engineers are able to participate in Horizon 2020. [\[here\]](#)



Sustainable Textile and Fashion Value Chains - European Outdoor Group

In early 2019, members of the DEMETO project submitted a contribution to the Springer Publication "Achieving a new circular textiles economy thanks to breakthrough technology innovation". The chapter entitled "Sustainable End-of-life Concepts and Strategies in the Textile and Fashion Industry" contained inputs from the DEMETO partners.

The chapter aims to offer readers a view on the current situation of post-consumers garments collection and recycling by illustrating state of the art practice on post-consumers garments collection, current limitations of post-consumers textile after collection and processing and current recycling (downcycling) technologies for textile waste. [Read more](#)



PETCIA

PETCIA (PET Compaias para ai reciclagem) is a specialised PET sorting and recycling company that belongs to Demetis Group, one of the main European players for mechanically recycled PET. Their mechanical recycling process consists in several steps: bales breaking, bottles pre-washing, grinding, washing, drying and packaging products. In this process, many types of by-products can be generated, with different levels of PET and contaminants. [Read more](#)



RECO GROUP

RECO GROUP is a team of very creative and innovative people, all of whom they believe is a strength of the DEMETO consortium. Their role is to be innovative and entrepreneurial, as they monitor their participation in this project a possibility to turn ideas and solutions into reality.

RECO GROUP has the possibility to work together with different companies to make a difference in the recycling industry. In this moment, we are investigating possible ways to increase PET final products such as plastic packaging and furniture for the existing customers (customers). And not only they are used to ensure that this processes are economically efficient. We feel that we are inventing something really innovative and unique that can be produced from recycled materials, making the PET economy circular.

The recycling technology will be used of the European Plastic Strategy implementation tools for virgin PET resin producers. [\[here\]](#)



DEMETO at CITEC conference

Massimo Cipolla, CEO of the DEMETO consortium partner grise, presented the innovative PET chemical recycling technology of DEMETO during the Petco Plastic Solutions ("La Petco Solutions Show"), organized by Citec and the German Plastics Cluster (GPC) in Potsdam on 4 and 5 February 2019.

Grise and DEMETO were presented on one of the preceding days that proposed a solution for the problem of plastic waste, by offering a unique and innovative chemical recycling technology for PET. [\[here\]](#)

DEMETO at Bioeconomy

Area A in G. December 2018, DEMETO was present at the Circular Economy Series exhibition of Bioeconomy in Bari, Italy. The Circular Economy Area was a high-profile showcase for projects processing waste streams to produce high-value chemicals and panels, but also with a real "design" by professional artists, a clear initiative toward to the circular economy was presented.

Companies such as Grise or Unilever shared the space with universities and European projects for R&D. The general representation of different supply chains and the "Circular Economy" of industrial sectors can be found [\[here\]](#).



DEMETO at TextileBioChange Sustainable Mobility Conference

Three companies from the DEMETO consortium and Industrial Advisory Board were present at the TextileBioChange Sustainability Conference in Milan on 12-13 December 2018. In full about the idea that the chemical recycling process of DEMETO can offer to the textile industry.

Under the title "The Future that Businesses & Stakeholders Want", the Circular Business Conference, organized by the Italian Circular Economy Association (ACE), included a panel discussion together about the promising new industrial process in chemical recycling PET bottles, fiber restantes and even textiles, that offers new possibilities of closing loops in the plastic value chain.

The panelists discussed the challenges and opportunities of creating partnerships to address the global issues of recycling, reduction, prevention and PET. You can read the [\[here\]](#). More information on the conference [\[here\]](#).

Scientific Workshop Brussels, 4 June 2018 – Save the date

On 4 June, in Brussels, ICEx (Polymer Composites) will host a scientific workshop on chemical recycling. The event aims at meeting all stakeholders interested in the development of chemical recycling and discussing with them the potential of this technology.

Industry representatives and industrial entrepreneurs will discuss the legislative and regulatory framework of chemical recycling and be invited to learn firsthand the results of the European industry. The event will also facilitate the creation of synergies between European projects working on chemical recycling for different polymers and applications.

DEMETO, together with other EU projects, will be presented in a dedicated session for ICEx and UNIC projects (Aggregation of open space).

DEMETO 12th Month Consortium Meeting

Conference 29 January 2019 – NextChem

On 29 January 2019, the DEMETO project partners met at the premises of the Danish Technical University (DTU) in Copenhagen to discuss the latest development and overall progress of DEMETO.

The first year of the DEMETO project went according to plan and the technical results even surpassed the expectations. The participants also visited the technical facilities of the DTU, where some of the test for DEMETO are being carried out.

In the first quarter of 2019, a scientific dissemination workshop will be organized by the consortium to explain the DEMETO project and enter into a dialogue with the European scientific community.

The conference was organized in three plenary sessions focusing on Energy, Green chemistry & Biotechnology and Sustainable Mobility, each followed by two parallel sessions. The industry representatives in the framework of green chemistry, participants also had the chance to present their ideas and innovations. NextChem dedicated a space to showcase the objectives and the preliminary results of DEMETO, presenting a demo video and distributing copies of the project brochure.

More than two hundred people from industry, universities and research centres attended the conference.

Upcoming events

4/06/2019 Chemical Recycling Conference in Brussels

05-06/2019 Industrial Advisory Board Webinar

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° N8573, DEMETO.



demEto

Avenue de Cortenbergh 71
1000 Brussels – Belgium
info@demeto.eu
www.demeto.eu

2.8 Videos

Videos are important tools to increase the outreach of Demeto. In August 2018 a first video was published on the Demeto website and [Youtube channel](#). The video summarizes the revolutionary technology with dynamic, simple messages. A background voice coupled with text that accompanies the images makes it possible to watch the video with or without sound, which makes it accessible for everyone on every device in different situations.



Today it is hard to imagine our world without PET.



Yet, only a fraction of it is recycled.



Only 11% worldwide



Will be **LANDILLED**

More than
30%

However, all PET
products share the
same elements

MEG + PTA



So why don't we



and re-use the materials?

DEM3TO is a European project
that turns this vision into reality.



Demeto's technology



speeds-up the recycling process



allows infinite recycling



at industrial scale

**FOOD
CONTAINER**

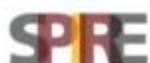


To

BOTTLE



DEM3TO
**Modular, scalable and high-performance de-polymerization
by Microwaves**

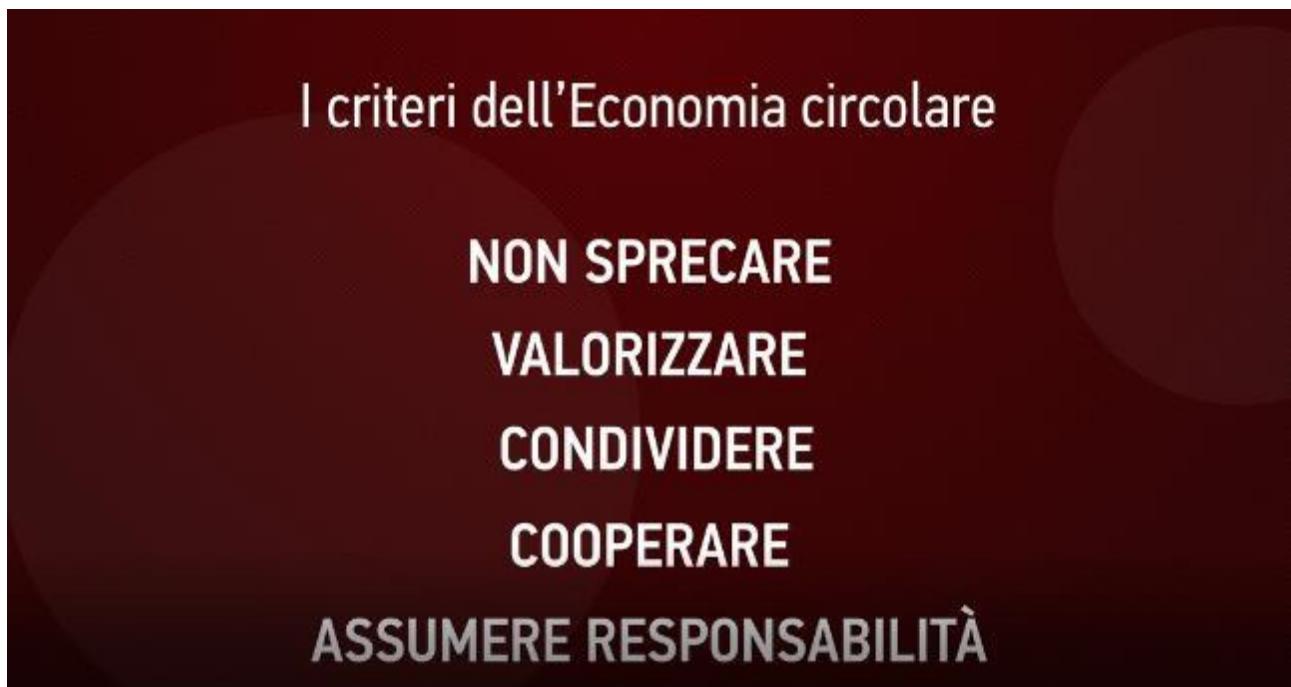


DEM3TO is an official Spire project. Find out more at
www.spire2030.eu/demeto



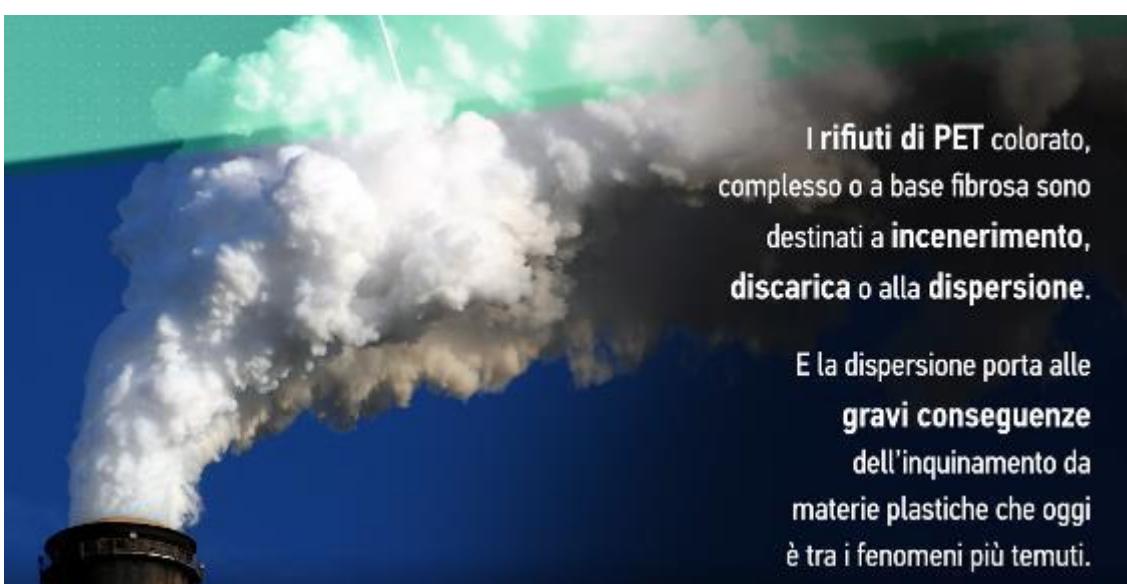
This project has received funding from the European Union's
Horizon 2020 research and innovation programme under grant
agreement N° 768573, DEMETO.

In November 2018 DEMETO had a booth at the Circular Stories Area during the Ecomondo fair in Rimini, Italy. To better target the local audience a similar version of the video in Italian was created. The below screenshots summarise the video:



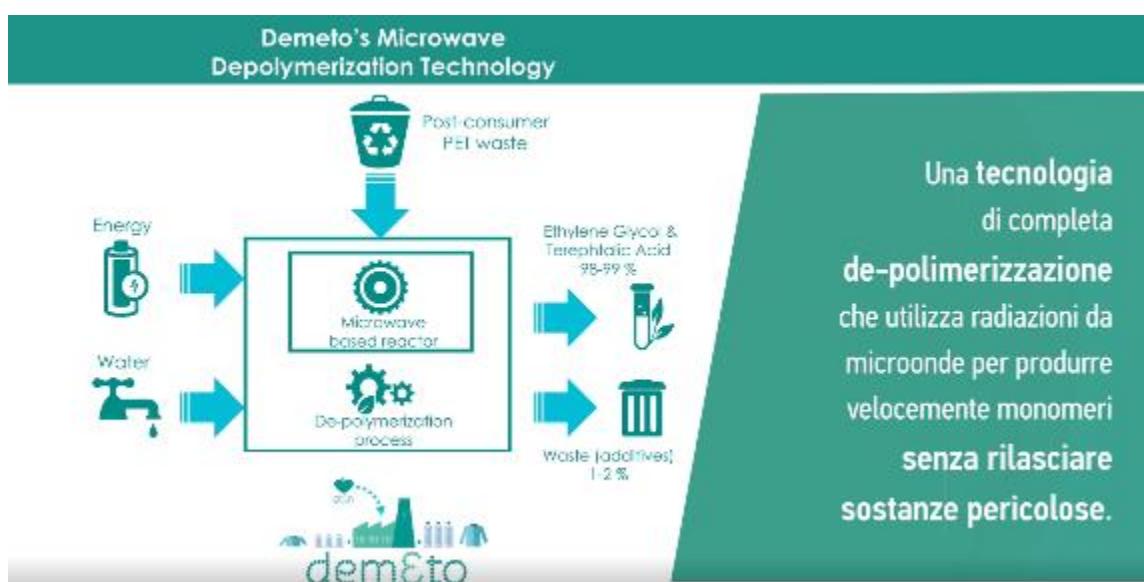


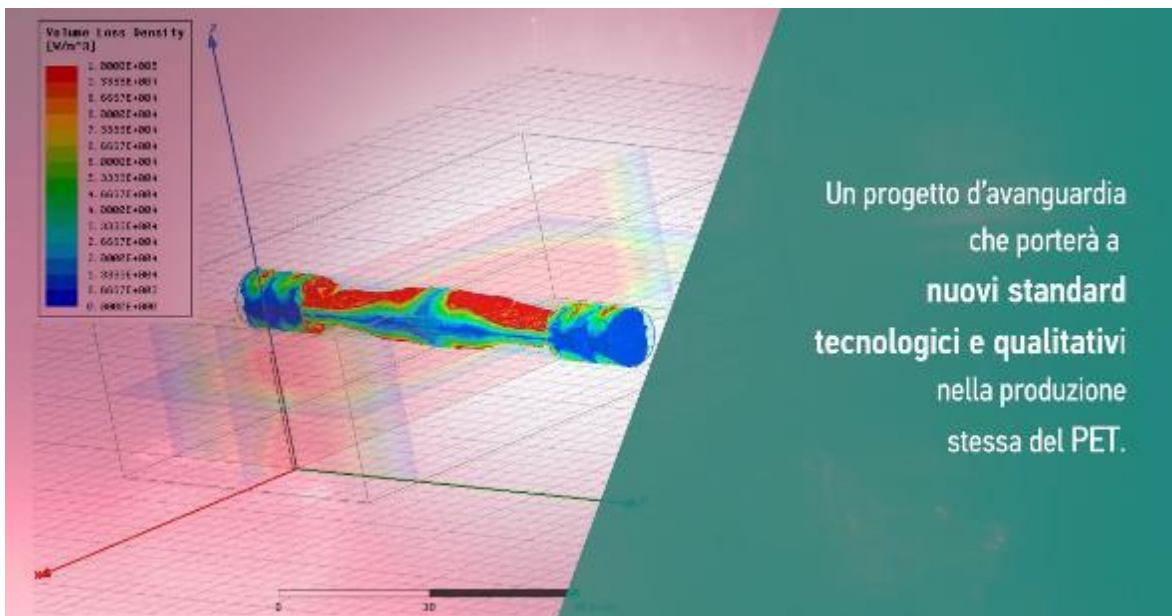
Va ricordato che oggi solo una parte del PET può essere riciclata meccanicamente, cioè sminuzzata in granuli o scaglie per produrre nuovi oggetti.



I rifiuti di PET colorato, complesso o a base fibrosa sono destinati a **incenerimento, discarica** o alla dispersione.

E la dispersione porta alle gravi conseguenze dell'inquinamento da materie plastiche che oggi è tra i fenomeni più temuti.





Un progetto d'avanguardia
che porterà a
nuovi standard
tecnologici e qualitativi
nella produzione
stessa del PET.



2.9 DEMETO workshops

2.9.1 IAB meetings and webinars

Specific training materials where drafted for the participants of the workshops and are accessible in the members' area of the DEMETO website.

For the IAB meetings of the 28th September 2017 and the 9th February 2018 the following power point presentations were drafted and made available as a follow-up: Agenda, Introduction, Business Model, DEMETO & Industry 4.0, The Reactor, The Process, Round Table - End Users, Round Table – Producers, Round Table – Suppliers and Life Cycle Assessment.

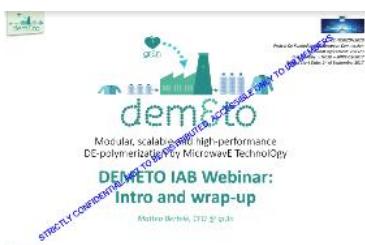
IAB Meeting 9/2/2018



IAB Meeting 28/9/2017



For the IAB webinar on 18th October 2018 another power point presentation was drafted and made available.



2.9.2 Synergies in H2020 projects

Collaboration with other H2020 projects is of high importance, gathering with other project officers to exchange ideas about the circularity of plastics is mutually beneficial. For this reason, the Demeto consortium contacted several H2020 projects to the workshop “Plastics Circularity - Synergies in H2020 Projects” on 3 June 2019: Terminus, Decoat, PUReSmart, Repair 3D, MMAtwo, Multicycle, iCAREPLAST, ISOPREP, Harmoni, polynSPIRE, PlastiCircle, CIRC-PACK and FiberEUse.

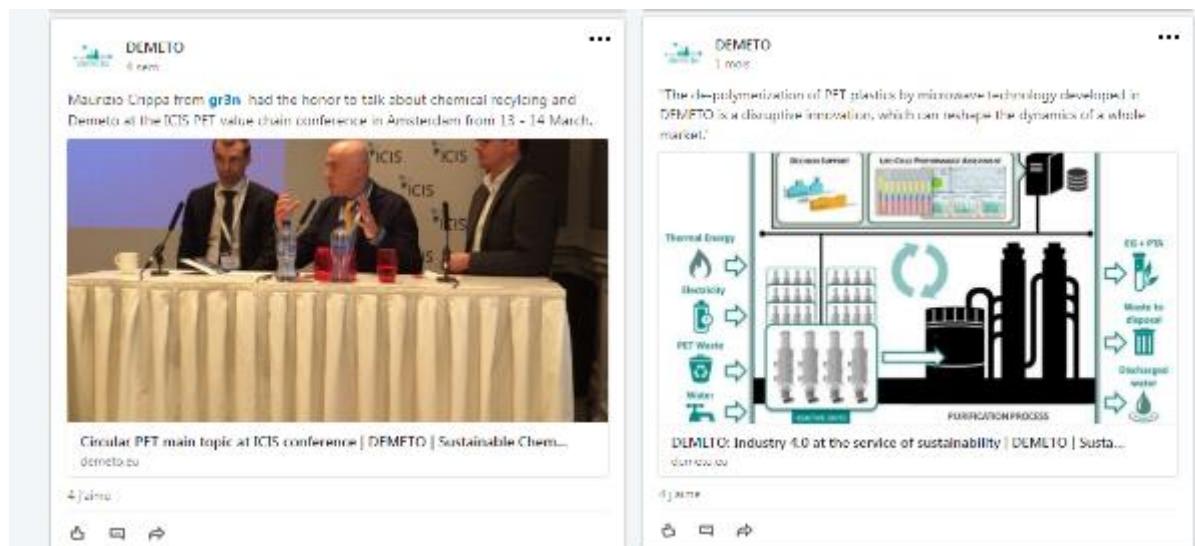
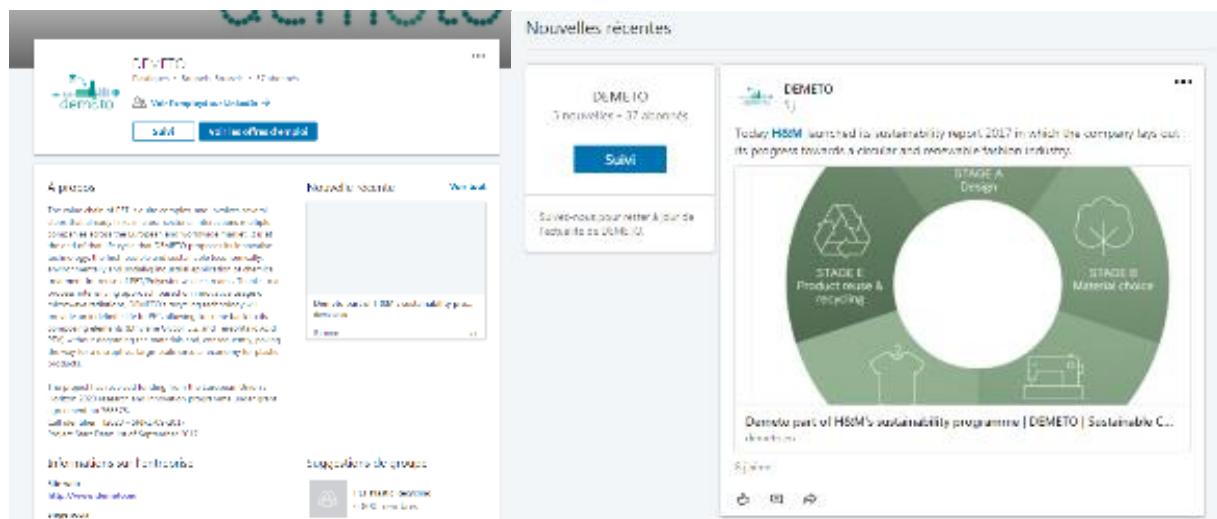
The goal of the event is to share ideas to coordinate communication and dissemination activities, and eventually define other scopes of collaboration. The meeting is also an occasion to open up a dialogue about common challenges and needs for the successful implementation of a Plastics Circular Economy in Europe.

2.10 Social media

Another important platform to publish information about the results and the development of the project are DEMETO’s social media accounts. News are promoted both via LinkedIn and Twitter.

2.10.1 LinkedIn

DEMETO LinkedIn is available at <https://www.linkedin.com/company/18329242/admin/updates/>



DEMETO 2 mois

Our February 2018 Newsletter is now online. Visit our brand new website to see the progress of the Demeto project and its advanced chemical recycling technology.

demEto

Our Progress | DEMETO is a revolutionary new way to chemically recycle... demeto.eu

4 likes · 2 comments

DEMETO 150 followers 10mo

"A breakthrough paving the way for better #plasticsrecycling": the success story of Demeto.

Demeto: 13 Organisations from eight European countries are paving the way for chemical recycling of PET | DEMETO | Sustainable Chemical PET & Polyester demeto.eu

11 Likes

DEMETO 158 followers 7mo

SUPSI is working in close collaboration with the engineers of SYNESIS, GR3N and F&M to advance in Demeto's microwave reactor design. #plasticsrecycling #Demeto

SUPSI-ISEA – Advancements in Demeto's reactor design | DEMETO | Sustainable Chemical PET & Polyester Recycling demeto.eu

7 Likes

DEMETO 150 followers 7mo

Launch of the new European Project on Chemical Recycling DEMETO! DEMETO aims at enabling chemical de-polymerization of PET at industrial scale based on its microwave based process intensification, focusing as a start on coloured ... voir plus

demEto

Launch of the new European Project on Chemical Recycling DEMETO. demeto.eu

4 likes · 2 comments

DEMETO 150 followers 7mo

Maurizio Crippa from gr3n explains why #demeto is revolutionizing the PET recycling industry. #plasticsrecycling

Not so difficult after all: microwaves target PET

demeto.eu

10 Likes · 2 Comments

DEMETO 158 followers 7mo

Great news for the chemical recycling project #DEMETO! The Coca-Cola Company joins the Industrial Advisory Board of the Horizon 2020 funded project that aims to revolutionize the chemical recycling of #PET. ... voir plus

demEto

DEMETO welcomes The Coca-Cola Company to its Industrial Advisory Board | DEMETO | Sustainable Chemical PET & Polyester Recycling demeto.eu

26 Likes · 2 Comments

DEMETO 158 followers 2mo

DEMETO consortium partner gr3n chosen as the #EUProjectOfTheMonth! GR3N were one of the 2018 EU Innovation Radar Plus, which developed a breakthrough technology for the chemical recycling of PET / Polyester through their pr ... voir plus

#EUPROJECTOFTHEMONTH

gr3n-recycling.com @CORDIS_EU

12 Likes · 1 Comment

2.10.2 Twitter

DEMETO has its own hashtag for important news and developments related to the project. All relevant tweets can be found under the hashtag #DEMETO. In addition to this, the most recent tweets are displayed in a twitter feed on the homepage of the DEMETO website.

Petcore Europe @petcoreeurope • Apr 13
#Chemical #recycling project #demeto is part of @hm sustainability programme demeto.eu/single-post/20...

EuPC @EuPCplastics • Mar 1
The first #Demeto newsletter is here. Read more about the @EU_H2020 funded project that aims to revolutionise the chemical recycling of #PLA. Click on the image below or visit demeto.eu for more information.
#recycling #plastics #circularconomy

Newsletter February 2018
demeto

Demeto Newsletter Feb 2018
demeto.eu

Petcore Europe @petcoreeurope • Feb 8
In the last presentation of the #H2020 conference 2018 Maurizio Cappa presents the #H2020 funded #demeto project that up-scales microscale recycling. #CircularEconomy #Vito #PET

ACT-OR @ACT_O_R • 19 Dec 2017
At ACTOR we are proud to contribute with our modeling and #advancedcontrol expertise to the #DEMETO project for the 100% PET #recycling. More info: demeto.prozy.com/launch_of_the...

#advancedanalytics #controlsystem #businessintelligence #analytics

Coca-Cola Comunica 🍃 @CocaColaCo_es
Reciclado químico: ¿podría esta innovadora tecnología poner freno a los residuos de plástico? 🌎♻️ #PorUnMundoSinResiduos #DEMETO
bit.ly/reciclado-quim...

EU Research Results 🇪🇺 @CORDIS_EU
The #EUProjectOfTheMonth is #GR3N, winner of the 2018 @InnoRadarEU Prize, which developed a breakthrough technology for #upcycling #PET / polyester 🌎 through their participation in the #EUfunded @symbioplama project#DEMETO #Recycling #EUresearch

bit.ly/2le8LpE

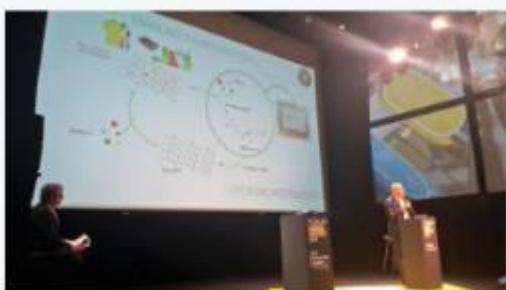
#EUPROJECTOFTHEMONTH 🇪🇺

gr3n-recycling.com @CORDIS_EU

**Citeo**

@citeofrance

#PlasticSolutions #Startup 3 : #Demeto
 Project/Gr3n 🇮🇹 🇫🇷 🇨🇭 propose un procédé de dépolymérisation par hydrolyse qui se distingue par l'utilisation de micro-ondes
 #SolutionsPlastiques.

**Petcore Europe**

@petcoreeurope

Interesting article that shows how #demeto and other chemical #recycling projects can make PET circular: mrw.co.uk/knowledge-centre/circular-economy/chemical-recycling-pet
 #CircularEconomy



Not so difficult after all: microwaves target PET
 By 2020 it is hoped that an industrial-scale chemical recycling plant will be up and running, offering a
mrw.co.uk

**Pelayo Bezanilla**

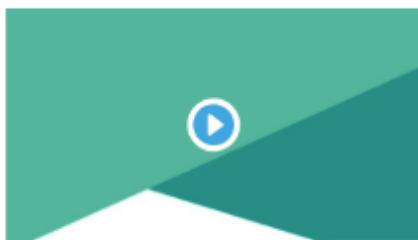
@PelayoBezanilla

¿#Sabíasque el reciclado químico podría poner freno a los residuos de plástico? #DEMETO
cocacolaespana.es/historias/reci...

**EuPC**

@EuPCplastics

#DEMETO, the chemical recycling project founded by @EU_H2020, just got its first video. Learn in only 76 seconds more about DEMETO's revolutionary approach to the #chemical recycling of #PET.



Sep 5, 2018

**Coca-Cola EU Dialogue**

@CocaCola_EU

Could chemical recycling radically change the way in which plastic is recycled? Hear perspectives from our technical director Isa Polli! #DEMETO coca-colacompany.com/stories/chemic...



Chemical Recycling: Could This Breakthrough ...

What if chemical recycling could radically transform the way plastic is recycled? Could it really turn coca-colacompany.com

Pack Online

@packonline

@CocaColaCo neemt zitting in adviesraad project chemische #recycling #Demeto
packonline.nl/foto-van-de-da...



3 OTHER MATERIALS FORESEEN

3.1 Updates

All the communication and dissemination material is updated regularly to reflect the progress of the project and to inform about current developments and the steps ahead.

3.2 Publications and scientific articles

At least a peer-reviewed journal article will be published and openly accessible via DEMETO website. The scientific articles are foreseen for the second half of the project to disseminate the first project results.

3.3 Video

A third short video is planned to be produced at the end of the project. The video materials will be disseminated via social media, DEMETO website and You Tube channel.

3.4 Poster

For the academic events, a poster will be drafted with the collaboration of all the partners. The DEMETO research poster will summarize the information or research to help to disseminate the project results. Also the poster will be available on the website.

The poster is foreseen for the second half of the project when the first results will be analysed.

4 CONCLUSIONS

This document presents and explains the dissemination and communication materials used to inform about the progress of the DEMETO project. It summarizes the update of the brochure, the banner, the general power point presentation, the templates, the press releases, the website, the e-newsletter, the video, the workshop materials and the social media activities.

It highlights that various materials for both internal and external communication exist, that all the materials are constantly updated, and that they are easily accessible on several platforms.

4.1 Summary table

Task	Major achievements Action	Links to other WPs
9.1	12 Power Point Presentations for the IAB members developed to use at the workshops on September 2017 and February 2018 as well as during the webinar in October 2018	WP2:Reference specifications of the pilot plant And first stages of the following WPs: <ul style="list-style-type: none"> — WP3:De-polimerization Process Intensification through modular MW-based Reactive Unit — WP4:Simulation, optimization and control of integrated microwave process — WP5: Design and engineering of the self-contained process of the pilot plant
9.2 9.7	Brochure, banner, general project presentation, templates for presentations and other internal documents, press releases, website, e-newsletter, video, social media (LinkedIn and Twitter)	All

4.2 Next steps

Task	Foreseen action	Partners involved	Delivery Date
9.5	Updated presentations and other materials for the IAB members	All	M21-M36
9.7	Regular updates corresponding to the project results available for dissemination: brochure, banner, general project presentation website, press releases, social media (LinkedIn and Twitter)	All	M21-M36
9.7	E-Newsletter published every 6 months	All	M21-M36
9.7	Publication of scientific articles and poster	All	M21-M36
9.7	Video	All	M36