



 **PLASTIC
ODYSSEY**
EXPEDITION



**THE EXPEDITION AROUND THE WORLD
TO FIGHT PLASTIC POLLUTION**



**A FLOATING LABORATORY INITIATING HUMAN-SCALE
SOLUTIONS TO RECYCLE AND REDUCE PLASTIC WASTE**

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I. PLASTIC POLLUTION



I. PLASTIC POLLUTION THE ILLUSION OF OCEAN CLEANUPS

Plastic everywhere

20 tons of plastic end up in the ocean **every minute.**⁽¹⁾
We swallow 5 grams per week.

Taking action at the source

90% of marine pollution originates from the coastal cities of 32 countries.⁽¹⁾

Ocean cleanups are impossible

Once in nature, plastic waste fragments itself into **irretrievable microparticles.**⁽²⁾

⁽¹⁾ Plastic waste inputs from land into the ocean - Jenna Jambeck et al. Science 347, 768 (2015) (cf Annexe)

⁽²⁾ A global inventory of small floating plastic debris - Erik van Sebille et al 2015 Environ. Res. Lett. 10 124006

I. PLASTIC POLLUTION THE SOLUTIONS ARE ON LAND

RECYCLING

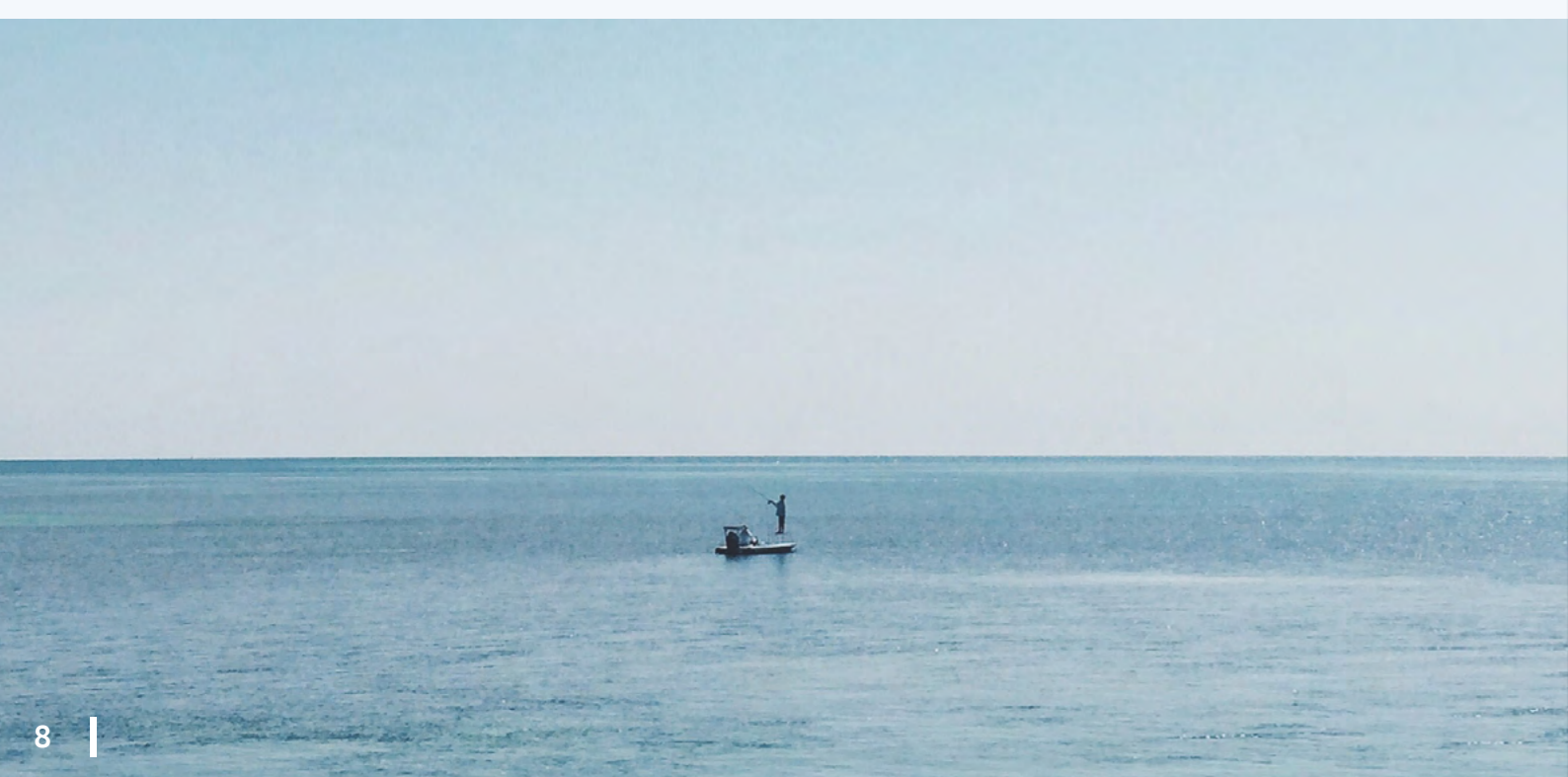
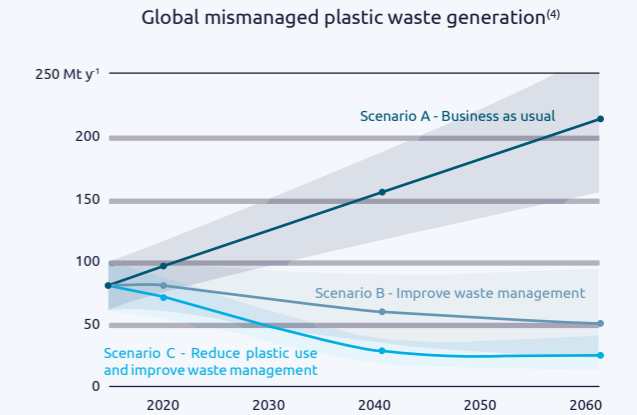
Recycling 1 waste product out of 2 in the 32 most polluted countries would allow us to **avoid 45% of ocean pollution.**⁽³⁾

⁽³⁾ Plastic waste inputs from land into the ocean - Jenna Jambeck et al. Science 347, 768 (2015)

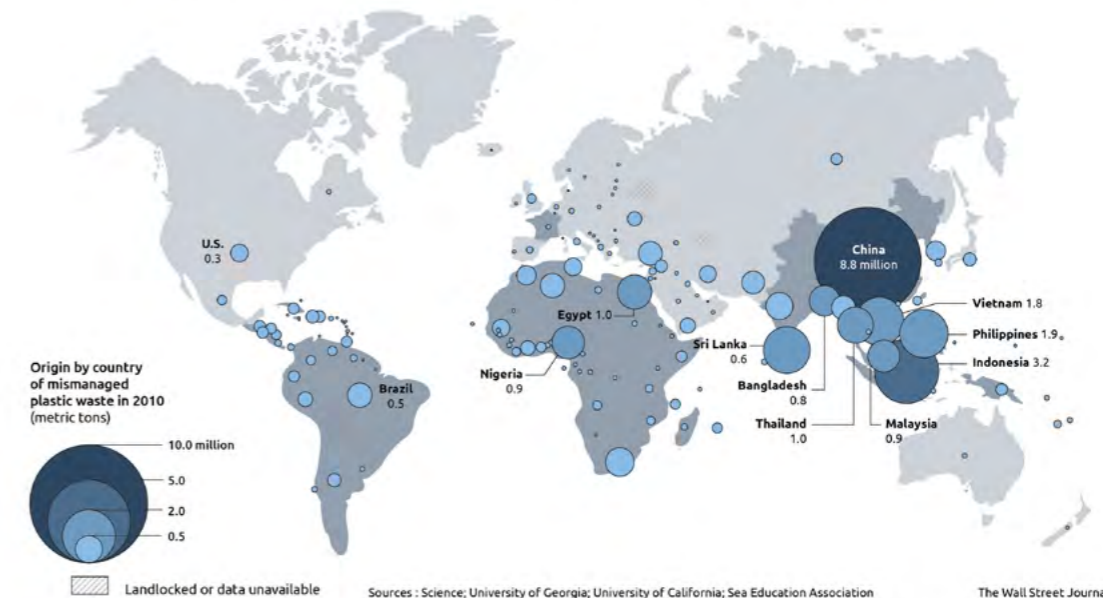
⁽⁴⁾ Global mismanaged plastic waste generation - The Ocean Cleanup

REDUCE

Reducing the production of plastic waste to 1.7kg per day per person could allow us to **avoid 26% of ocean pollution.**



Ocean Detritus - Much of the world's mismanaged plastic waste ends up fouling global waters



II. PROJECT



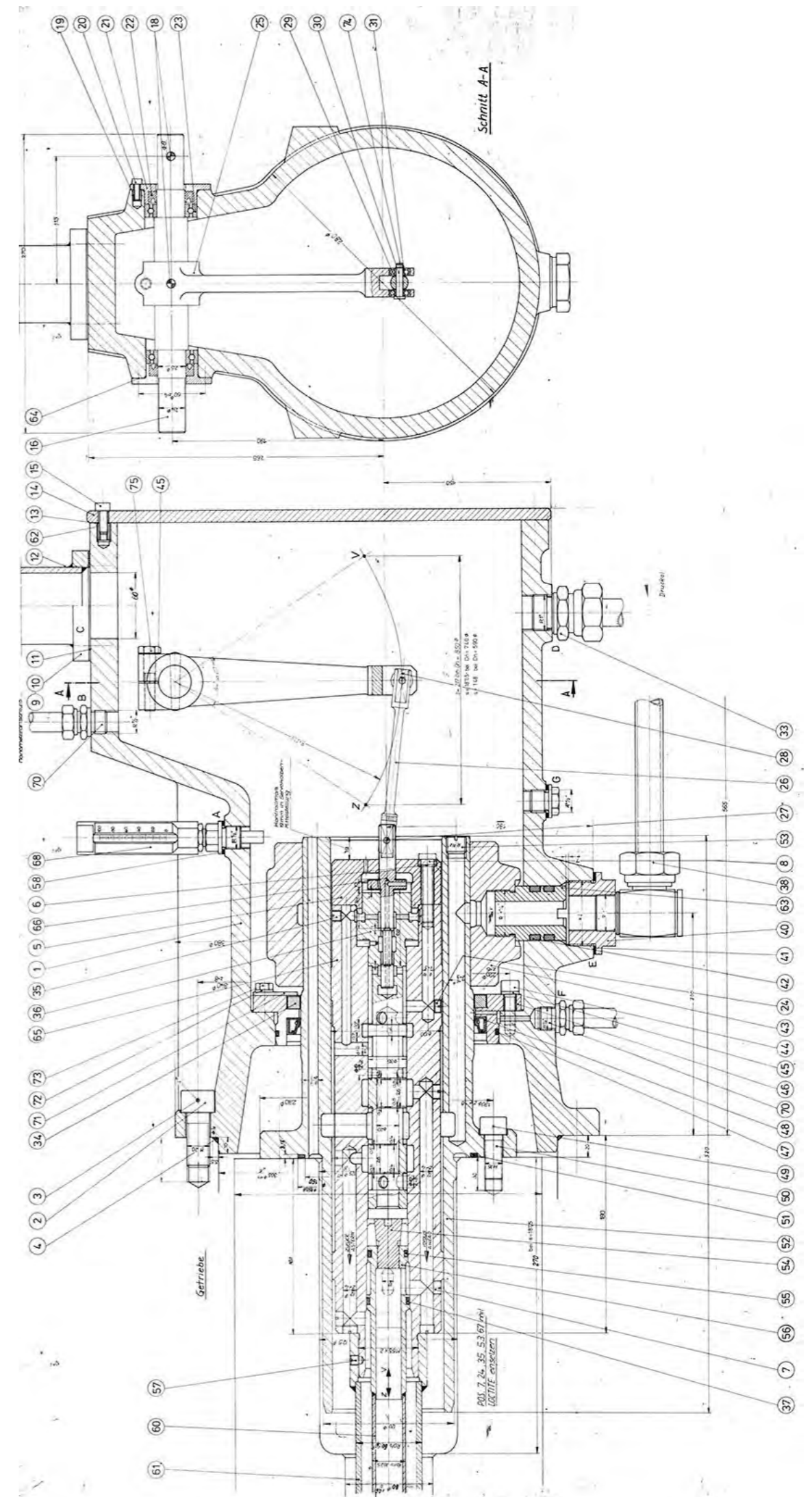
II. PROJECT VISION

Small Scale, big impacts

Solutions designed on a **local scale** to have a **global impact**.

Sharing knowledge

Broadcasting **innovations** in **open-source** to allow the most people to benefit.



II. PROJECT RECYCLING

From waste to resource

To give value to waste, Plastic Odyssey Expedition is working on three procedures:

SORTING

A sorting sensor capable of analyzing plastic waste.

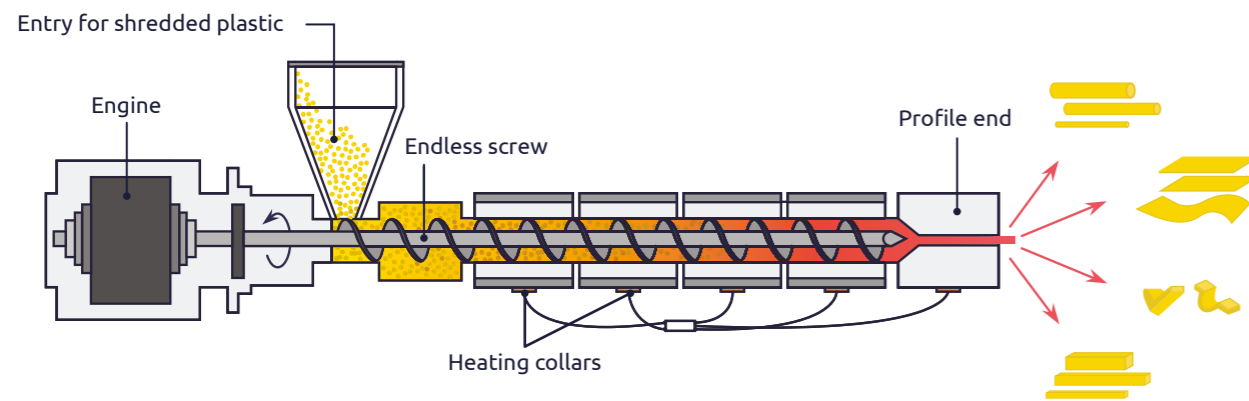
RECYCLING

An extruder to transform plastic into new objects.

RECOVERING

A pyrolysis system that creates fuel from non-recyclable plastic waste.

Multi-product extruder⁽¹⁾



⁽¹⁾ See the entirety of the technologies in the appendix

Our solutions

SOCIAL AND ACCESSIBLE

Creating solutions with local communities to meet their needs.

Simplify technologies to keep only the essentials and reduce costs.

ECONOMICALLY VIABLE

Developing recycling micro-factories to fight against poverty while protecting the environment.

II. PROJECT REDUCING



RETHINKING USAGE

Plastic is far from being indispensable for most packaging, and yet it makes up for 42% of plastic produced.

Eco-designing products allows us to **avoid the misuse of plastic.**



ALTERNATIVE MATERIALS

There are numerous organic materials that exist today which can be used to replace certain types of plastics, and yet, they are rarely utilized in industries.

61% of plastics found on beaches around the world are single-use



II. PROJECT THE VESSEL

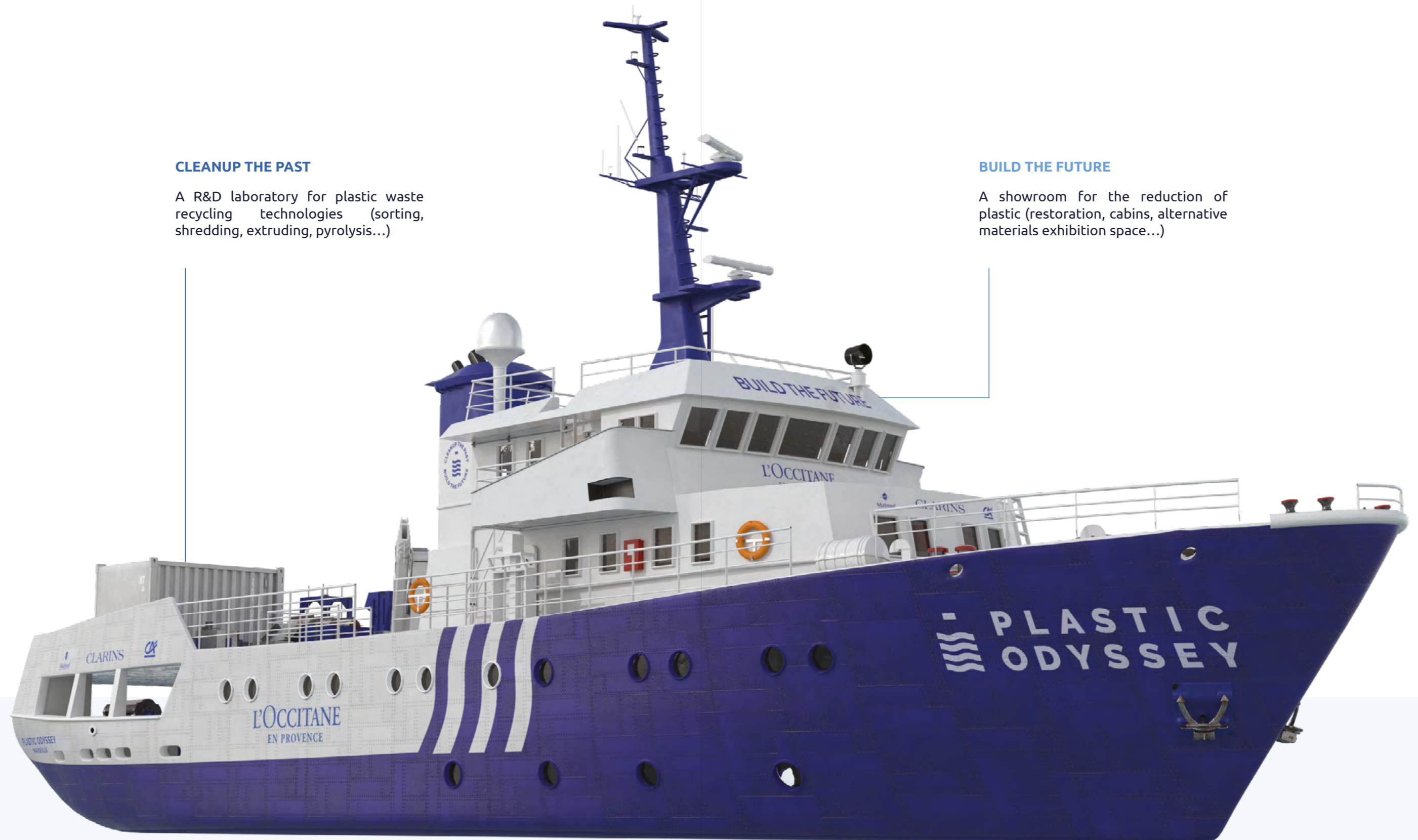
THE UNIQUE TOOL TO EXPERIMENT AND PROMOTE SOLUTIONS IN THE FIELD

CLEANUP THE PAST

A R&D laboratory for plastic waste recycling technologies (sorting, shredding, extruding, pyrolysis...)

BUILD THE FUTURE

A showroom for the reduction of plastic (restoration, cabins, alternative materials exhibition space...)



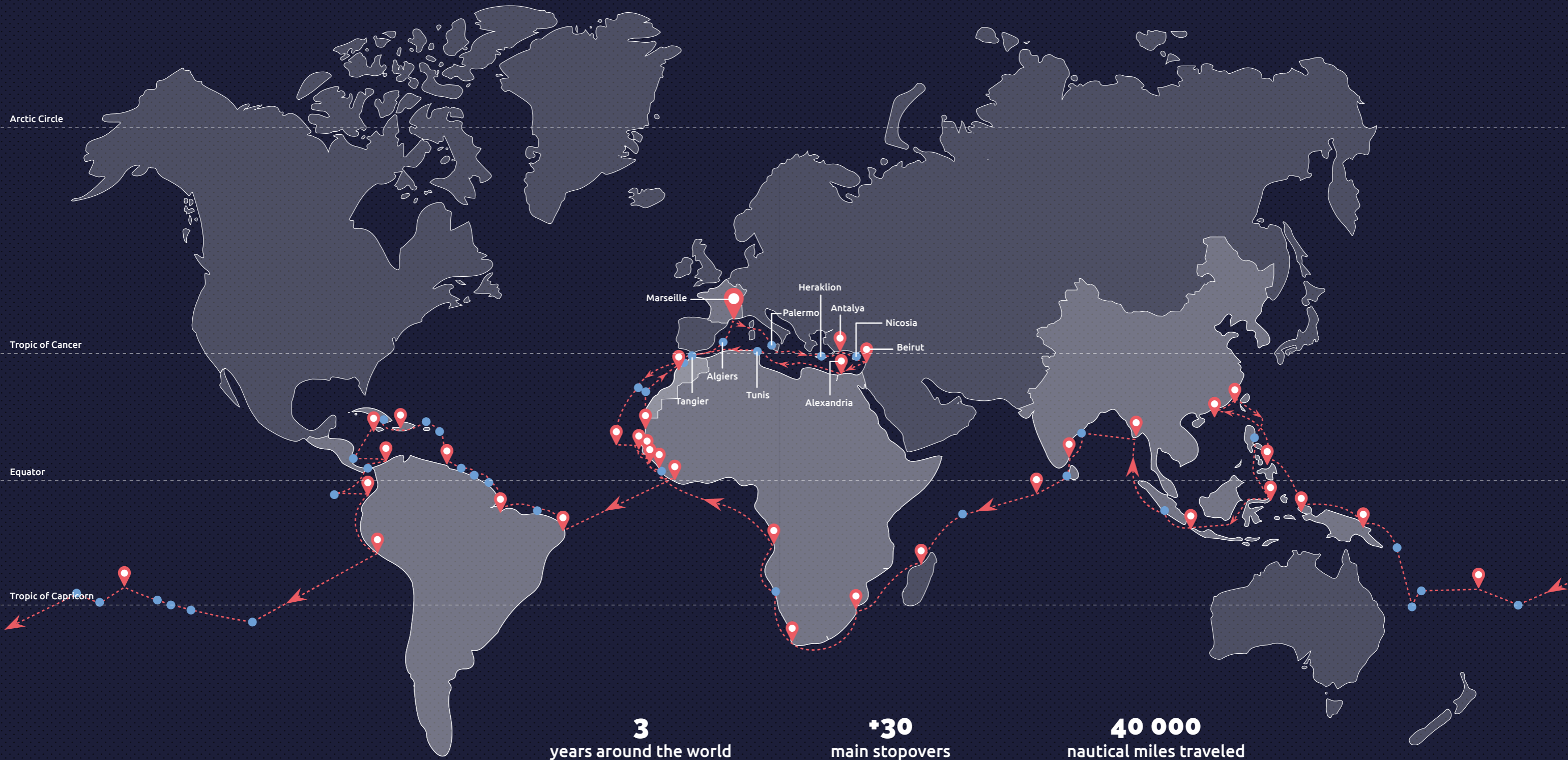
II. PROJECT THE EXPEDITION

DEVELOPING A GLOBAL NETWORK OF LOCAL INITIATIVES

1 Gather engineers, investors, entrepreneurs and decision-makers

2 Test and improve technologies

3 Broadcast the solutions so that they will be reproduced



III. THE TEAM



III. THE TEAM



Simon BERNARD - CEO



Alexandre DECHELOTTE - CCO



Bob VRIGNAUD - CTO



Tom BÉBIEN
Recycling technology manager



Élise THOREL
Production and content manager

THE CREW



Eric LE BORGNE



Marielle BERNABEU



Louis RECOULES



Magalie LEBLANC

CONTRIBUTORS

Yann LE BELLEC
Naval management - SeaSY

Sophie GALVAGNON
Naval management - SeaSY

Aurélien HÉBRARD
Fleet technical engineer - SeaSY

Julie MILHAU
Graphic designer

Mejdi NCIRI
Engineer - Impact Photonic

III. THE TEAM

SUPPORT COMMITTEE



Brune POIRSON

French Secretary of State, vice-president of the United Nations Environment Assembly



Roland JOURDAIN

Sailor, cofounder of the donation fund Explore



Guillaume BRIANT

Lawyer - Partner at Stephenson Harwood AARPI



Didier LE BRET

French diplomat, Former ambassador, Partner at ESL & Network



Patricia RICARD

President of the Paul Ricard Oceanographic Institute



Éric CAMPOS

Chairman of Grameen Foundation CA - Group CSR Director CA



Francis VALLAT

Honorary President SOS méditerranée, Founder Cluster Maritime Français



Marc VAN PET

Naval Architect, founder of VPLP, Cofounder of Watever

AMBASSADORS



Alice DAVID



Cyrielle HARIEL

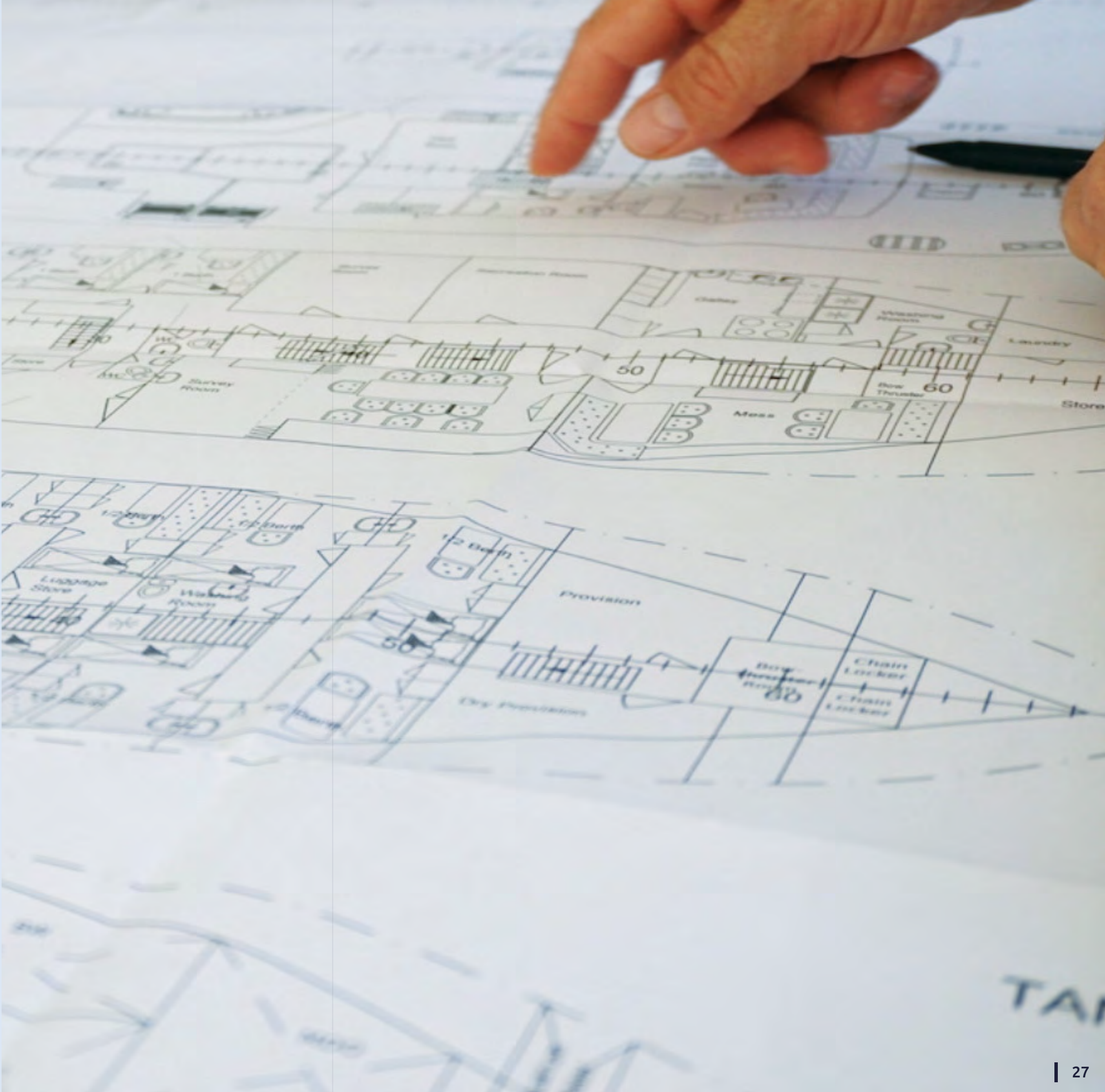


Martin SOLVEIG



Claudie HAIGNERÉ

IV. THE STEPS OF THE PROJECT



IV. THE STEPS OF THE PROJECT ULYSSE: A SUCCESSFUL PROTOTYPE

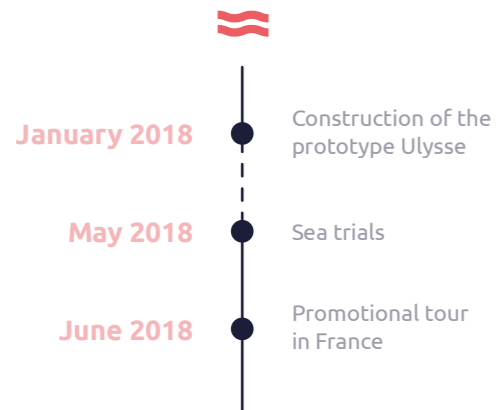
2018 - The Successful Prototype of Plastic Odyssey

The construction of Ulysse, a prototype vessel that is solely fueled by plastic waste.
The first step of an impactful worldwide adventure.



Construction

DEMONSTRATION



Inauguration by Brune Poirson

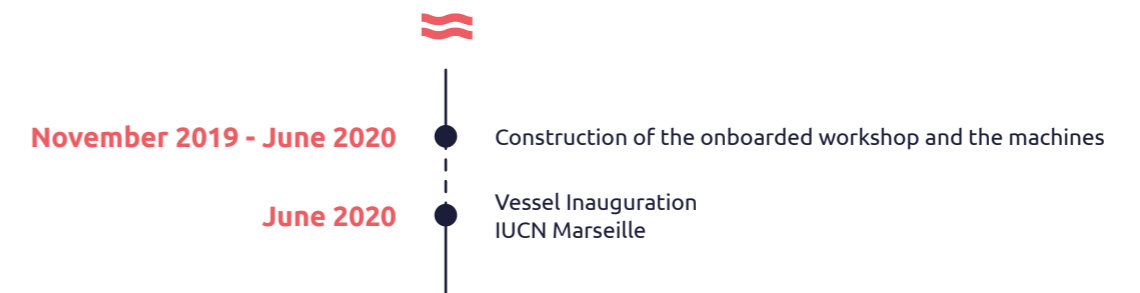
PREPARATION



Tour of France

IV. THE STEPS OF THE PROJECT TIMELINE

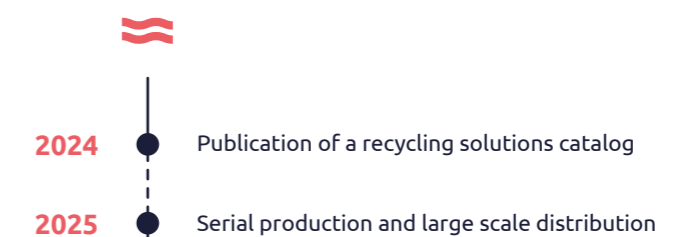
PREPARATION



EXPEDITION



EXPANSION



V. PARTNERS



AN EXPEDITION UNDER THE HIGH PATRONAGE OF



MAIN

L'OCCITANE
EN PROVENCE

OFFICIALS



CLARINS



SOCIALS

ENOWE

BIODERMA
LABORATOIRE DERMATOLOGIQUE

TECHNICAL PARTNERS

INSA
VALOR

PELLENCST

setec

bee
engineering

PONANT

TRIVÉO

ExcelRise

V. PARTNERS
MAIN PARTNER

L'OCCITANE

EN PROVENCE

L'OCCITANE EN PROVENCE was founded by Olivier Baussan in 1976. Since then, it has been creating beauty products made with essential oils and natural fragrances developed in accordance with the principles of phytotherapy and aromatherapy.

The L'OCCITANE research and innovation laboratories bring together tradition, nature and expertise to develop natural and effective cosmetic products.

The brand is presided over by Reinold Geiger and has a presence in 90 countries, with over 3,000 stores throughout the world.

Their motivation to support the Plastic Odyssey Expedition

“ We are facing an environmental crisis, and companies need to do more than reduce their impact on the planet. They have a responsibility and a duty to find real, concrete solutions in order to generate value for our ecosystem. As the main sponsor of Plastic Odyssey, L'OCCITANE en Provence is supporting a project focused on transforming plastic waste into a resource and thus help to develop a new economy. We're proud to be the main partner, for a duration of five years, and to be part of this incredible human adventure for the good of mankind. ”



Adrien GEIGER
Global Brand Director



V. PARTNERS OFFICIAL PARTNERS



Crédit Agricole is the largest network of cooperative and mutual banks in the world.

CLARINS

The Clarins Group has its own research and development laboratories and produces exclusively its care and perfumes in France.



With more than 3.8 million members, and 7.2 million* managed insurance contracts, Matmut is an important actor in the French market for insurance.

CRÉDIT AGRICOLE

“ Plastic Odyssey undertakes to use their local experience in a bid to provide solutions on a global scale.

Much progress also remains to be made in the so-called developed world. Supporting this project is a way for Crédit Agricole to help raise awareness among the general public about the fight against the over-consumption of plastics, starting with its 141,000 employees, 30,000 administrators and 51 million customers.”

CLARINS

“ Eco-friendly design and creative delivery are linked: from choosing the active ingredients to packaging, Clarins favors the most environmentally friendly materials and manufacturing processes. By 2025, all new Clarins products on the market will have recyclable packaging or include at least 50% recycled materials. ”

Christian COURTIN-CLARINS

CEO

MATMUT

“ The social, responsible, and citizen-oriented engagement of Matmut is a part of its DNA. The company has always been backed by a human and solidarity-based conception of insurance, socially responsible policies and initiatives to reduce its ecological footprint. ”

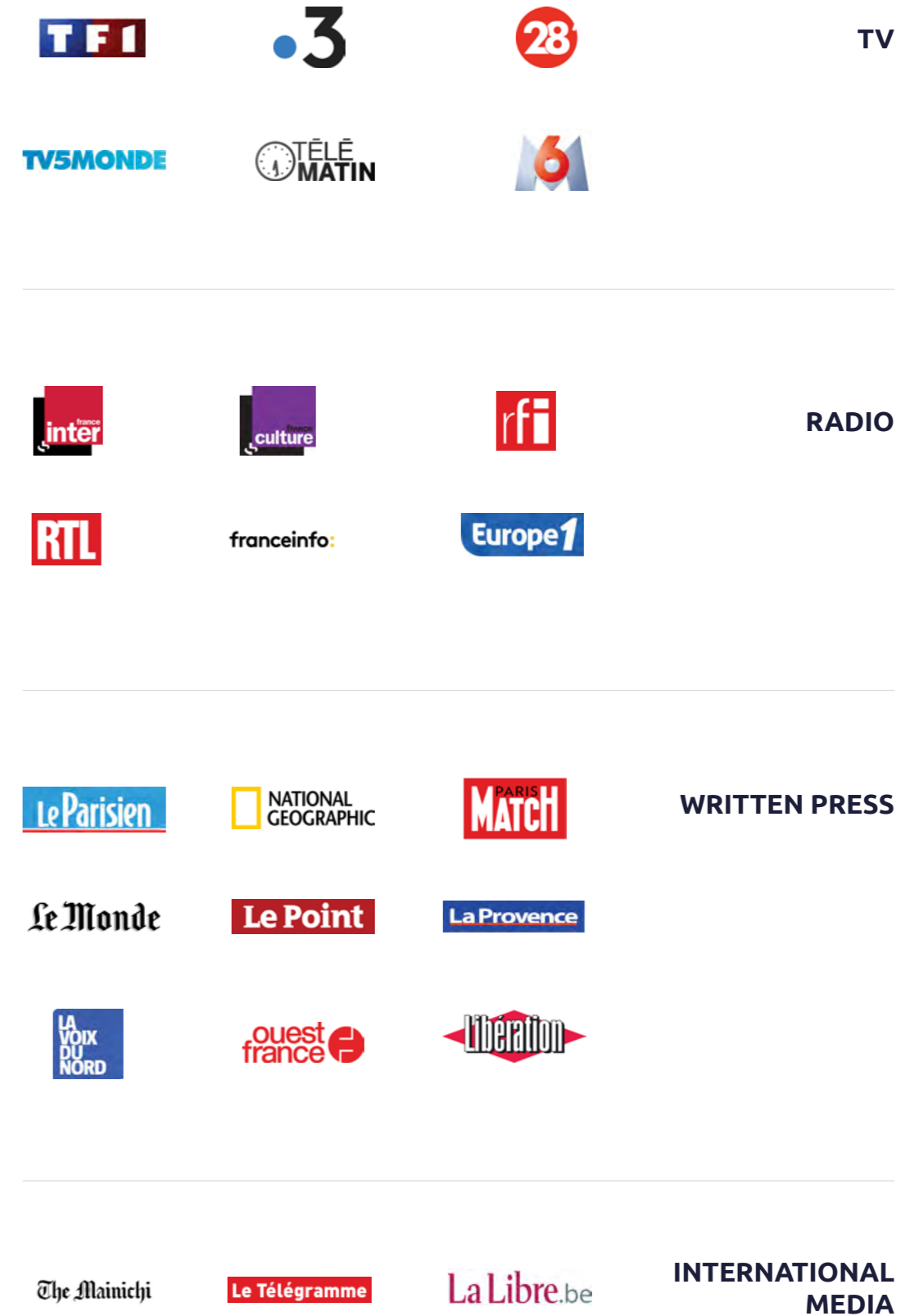
Stéphanie BOUTIN

Deputy General Director of Matmut

VI. MEDIA CONTENTS

WEB SERIES	
Subject	An expedition journal for a true immersion into the daily life of the crew
Broadcast	YouTube channel and Pure Player Web
EVENTS	
Subject	Conferences and workshops
Broadcast	Live social media coverage of powerful moments of the expedition
WRITTEN	
Subject	Articles with an academic purpose summarizing Plastic Odyssey's experiences and methodology Journal entries written by the founders about the adventure (partners exclusivity) A graphic novel about the challenges surrounding plastic pollution and the purpose of Plastic Odyssey
Broadcast	Website, Medium, social media, print publications
DOCUMENTARY SERIES	
Subject	Real time footage of Plastic Odyssey's destinations and actions on site
Broadcast	Prime time national TV and international distribution
Producers	Bonne Pioche - Emmanuel Priou

VII. MEDIA COVERAGE 2018-2019



VIII. TESTIMONIALS



Brune POIRSON

Secretary of State to the Environment
and Vice-President of the UN
Environment Assembly



Nicolas GOMART

General Director and
Vice-president of MATMUT



Marie LE ROY

Marketing Director
in Europe of L'Occitane

Brune Poirson @brunepoirson · 17 mai
 Heureuse de retrouver les membres de @PlasticOdyssey au #VivaTech !

Leur projet ? Une expédition à bord d'un navire laboratoire du #recyclage des déchets marins, de leur valorisation et de la réduction de la #pollutionplastique. Une équipe de pionniers !

Happy to find the members of Plastic Odyssey at VivaTech!

Their project? An expedition aboard a laboratory vessel of recycling and recovery, and the reduction of plastic pollution. A team of pioneers!

Nicolas Gomart @NicolasGomart · 15 mai
Contribuer à lutter contre le #7eContinent grâce à une #innovation pragmatique et frugale. Une belle ambition que la @Matmut, partenaire de @PlasticOdyssey, soutient avec enthousiasme #PollutionPlastique @VivaTech

Participate in the fight against the Great Pacific Garbage Patch / Plastic Pollution thanks to pragmatic and meticulous innovation. A beautiful goal which Matmut, partner to Plastic Odyssey, supports with enthusiasm. #plasticpollution #vivatech

Marie Le Roy @missmarieleroy · 15 mai
Very inspiring project and partnership between @LOccitane_FR and @PlasticOdyssey, a committed #startup fighting against plastic waste
@simn_bernard
#proudoofmycompany



www.plasticodyssey.org


IX. CONTACT

CONTACT

expedition@plasticodyssey.org

PRESS DEPARTMENT

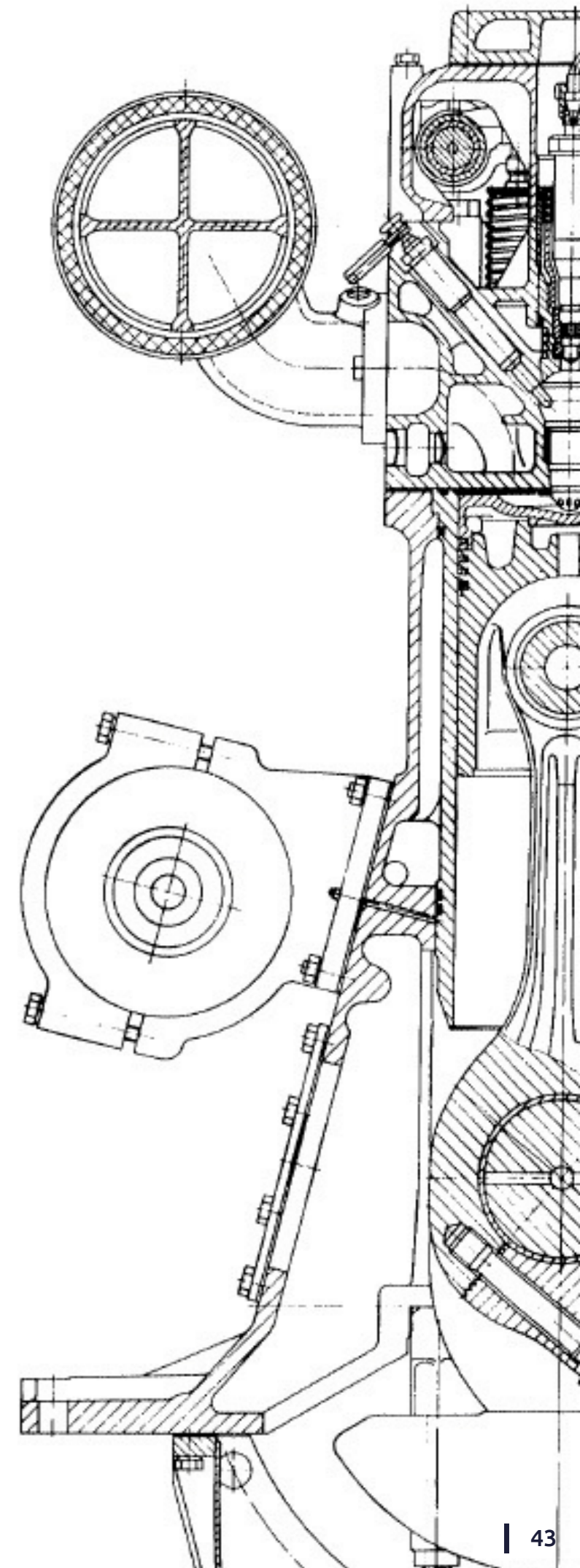
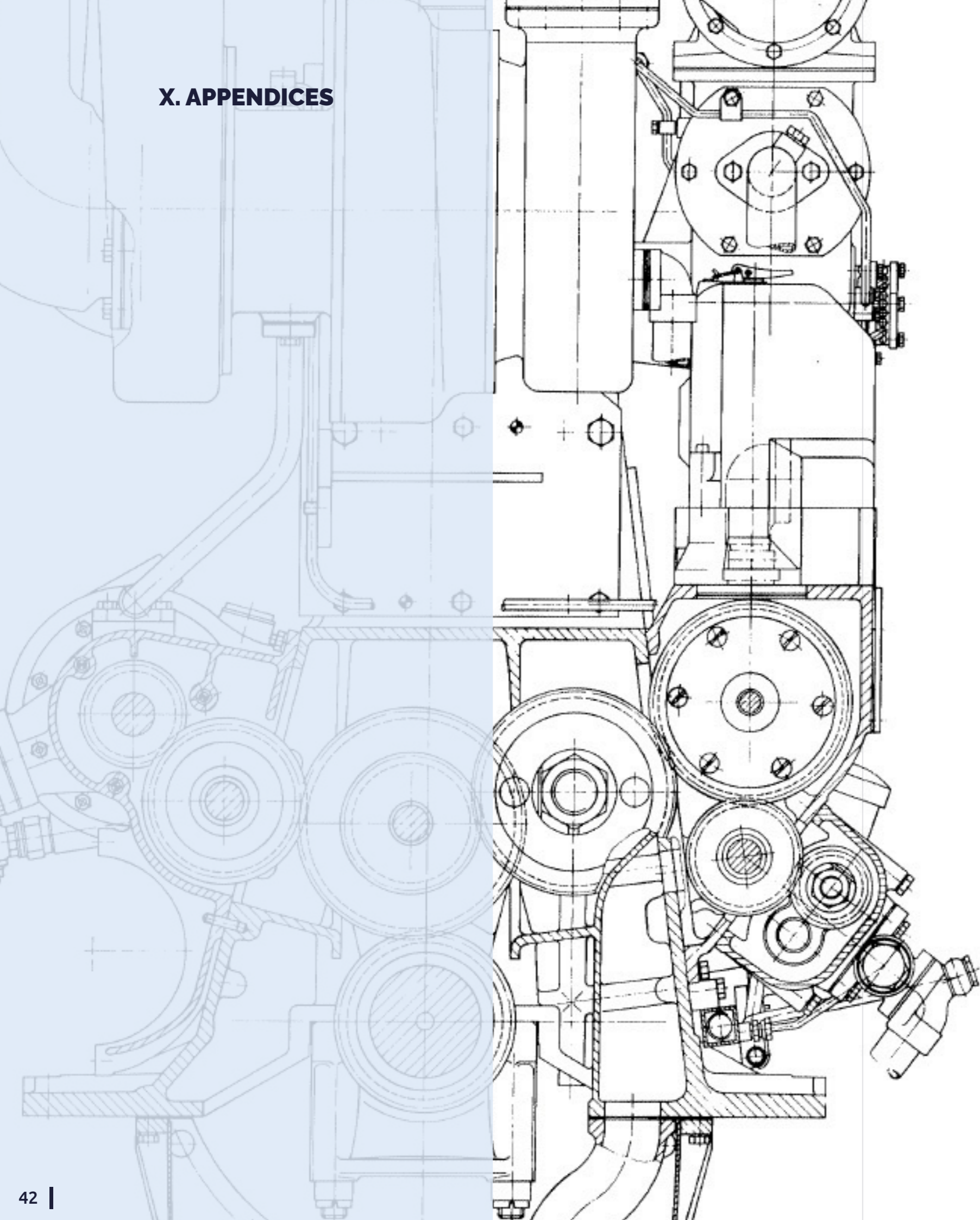
press@plasticodyssey.org

 [@plasticodyssey](https://www.facebook.com/plasticodyssey)

 [@PlasticOdyssey](https://twitter.com/PlasticOdyssey)

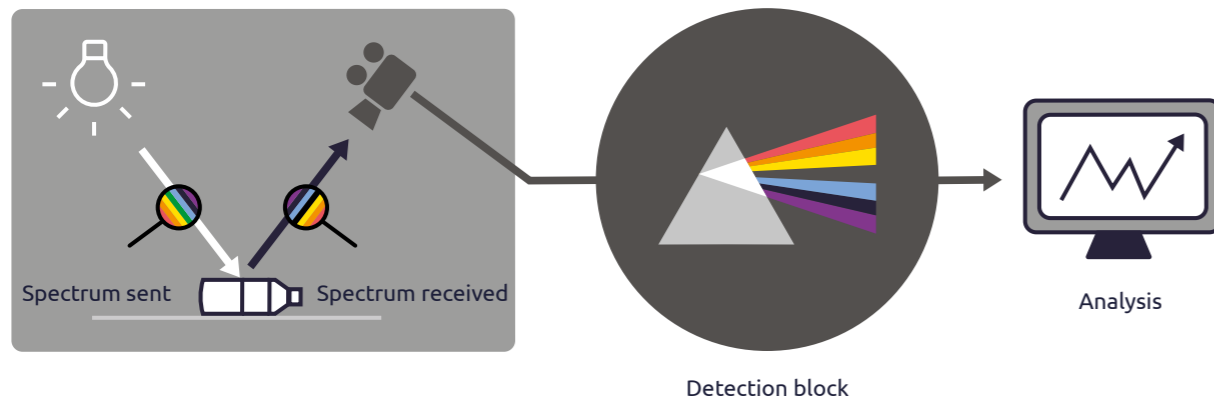
 [@plasticodyssey](https://www.instagram.com/plasticodyssey)

X. APPENDICES

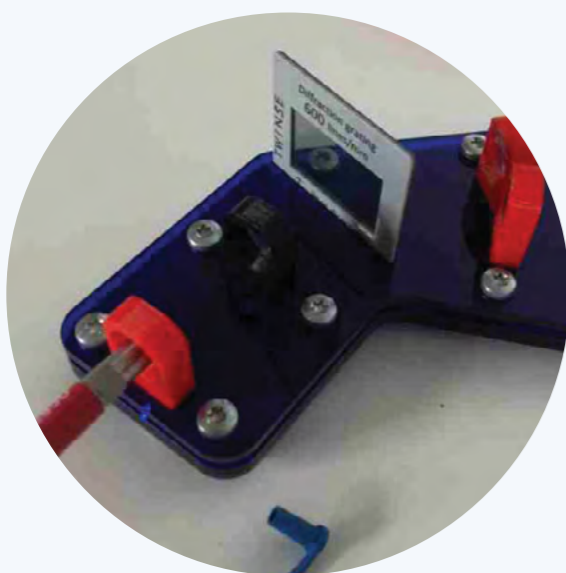


X. APPENDICES TECHNOLOGIES | Sorting

CONCEPT Near infrared spectroscopy plastic identification sensor to train operators better sort and help them limit manual errors. It makes it possible to identify the different families of polymers (PET, PE, PP, PVC, PS, etc.) to better sort them.



Spectroscopy

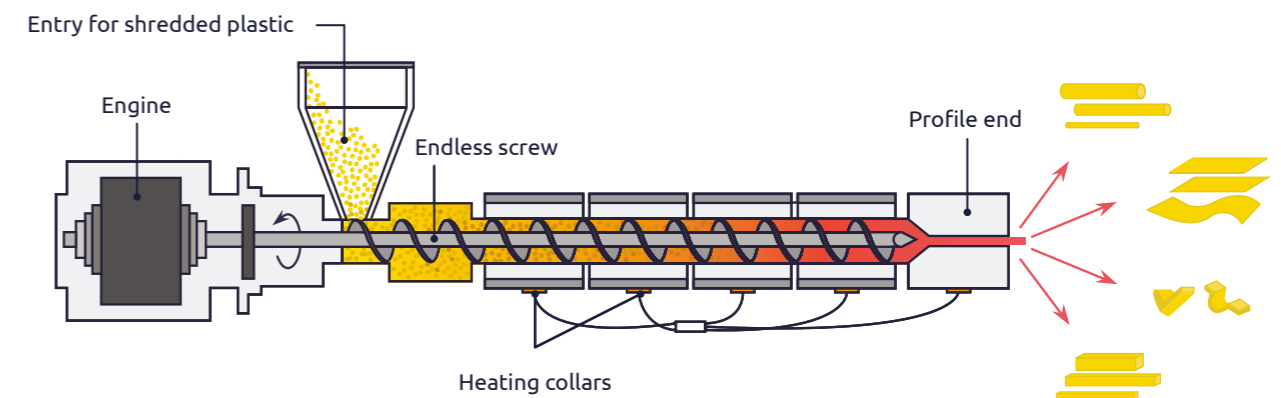


THE PROCESS

A source of light illuminates the plastic object to be identified. The plastic emits infrared waves invisible to the naked eye but detected by a sensor, a photodiode. It makes it possible to trace the characteristic spectrum of plastic which is then compared to a database thanks to an algorithm. The type of plastic is identified.

X. APPENDICES TECHNOLOGIES | Recycling

CONCEPT Extrusion is a shaping process widely used in the plastic recycling industry. An extruder heats and stirs the plastic, forming a viscous paste that will be shaped and cooled. This makes it possible to create universal and durable objects such as bricks, tiles, beams or plates.



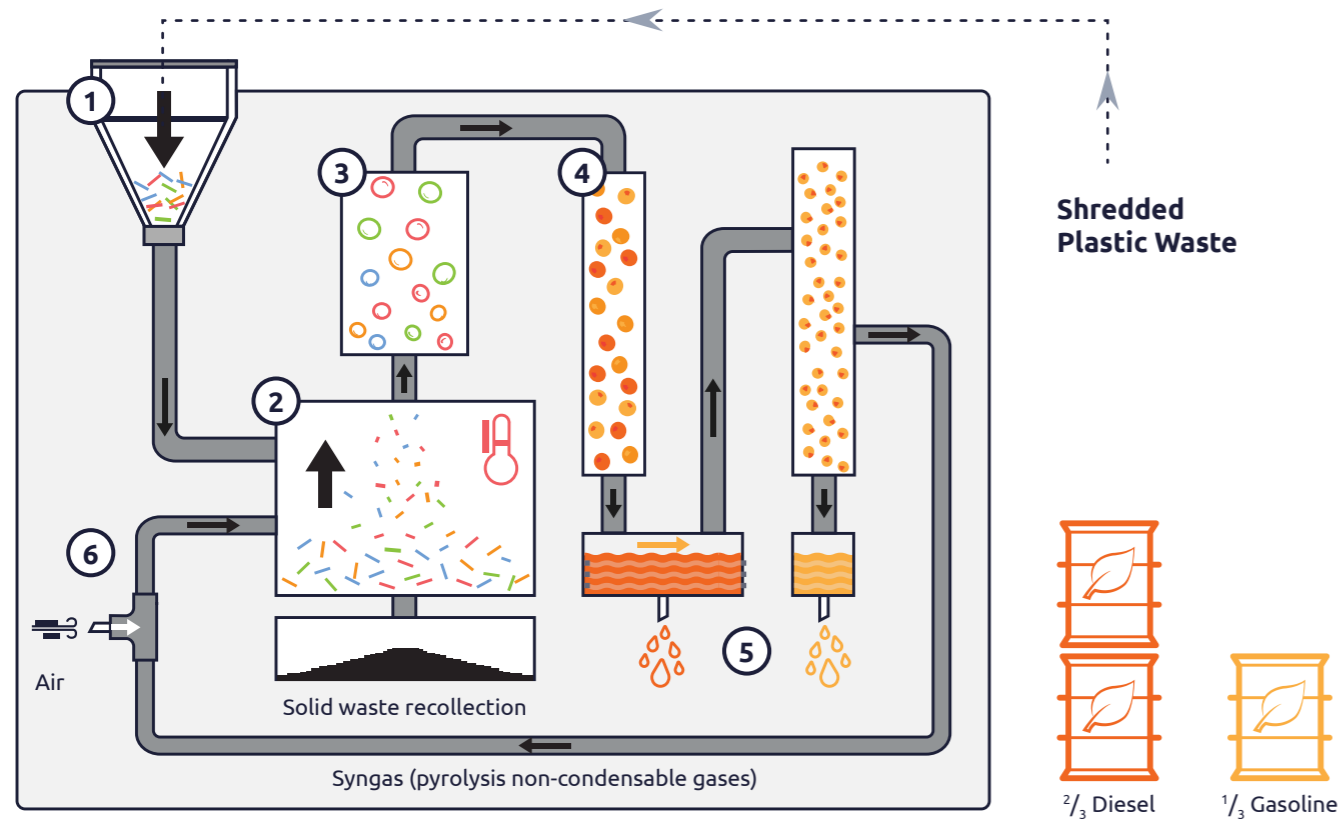
Multi-product extruder



THE PROCESS

The plastic material, previously reduced to flakes, is introduced into the extruder. Heating collars heat up the plastic which turns into a viscous paste in fusion. An endless screw allows the pressurization and transport of this paste to a profiled end piece placed at the outfeed. The molten plastic then enters into this end piece conferring the shape of the desired object, unchanged during cooling.

X. APPENDICES TECHNOLOGIES | Pyrolysis



THE PROCESS

- 1 Input**
The shredded plastic is inserted thanks to an endless screw.
- 2 Pyrolysis reactor**
The melted plastic is heated at more than 400 °C in the absence of oxygen. This way plastic molecules are cracked to obtain hydrocarbon vapors.
- 3 Reflux**
Only the most cracked molecules make it through, the larger ones remain in the reactor to be cracked again.
- 4 Fractional condensation**
The hydrocarbon vapors are cooled down and condensed at different temperatures in order to collect liquid hydrocarbons such as Diesel.
- 5 Collection of the liquids**
The liquid hydrocarbons are collected separately for different uses (motor, burners,...)
- 6 Collection of syngas and use**
Hydrocarbons that were not able to condense at room temperature are burned in order to heat the reactor.

 **PLASTIC
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EXPEDITION

contact@plasticodyssey.org

press@plasticodyssey.org

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