



Second Generation MethylMethAcrylate

*Valorization of FPD PMMA
in WEEE scheme*

[10.13140/RG.2.2.20340.42885](https://doi.org/10.13140/RG.2.2.20340.42885)

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EcoLogic

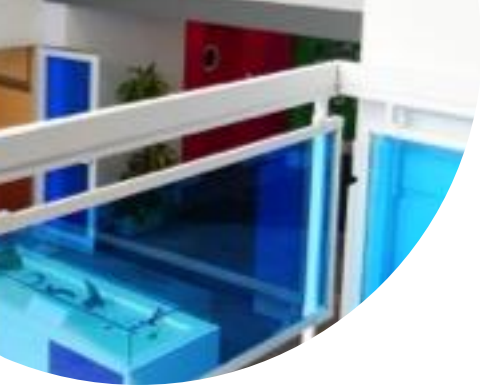
La 2^e vie des équipements électriques

MMAtwo
workshop

12/07/2022



This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement N° 820687.
The MMAtwo project results presented reflect only the author's view.
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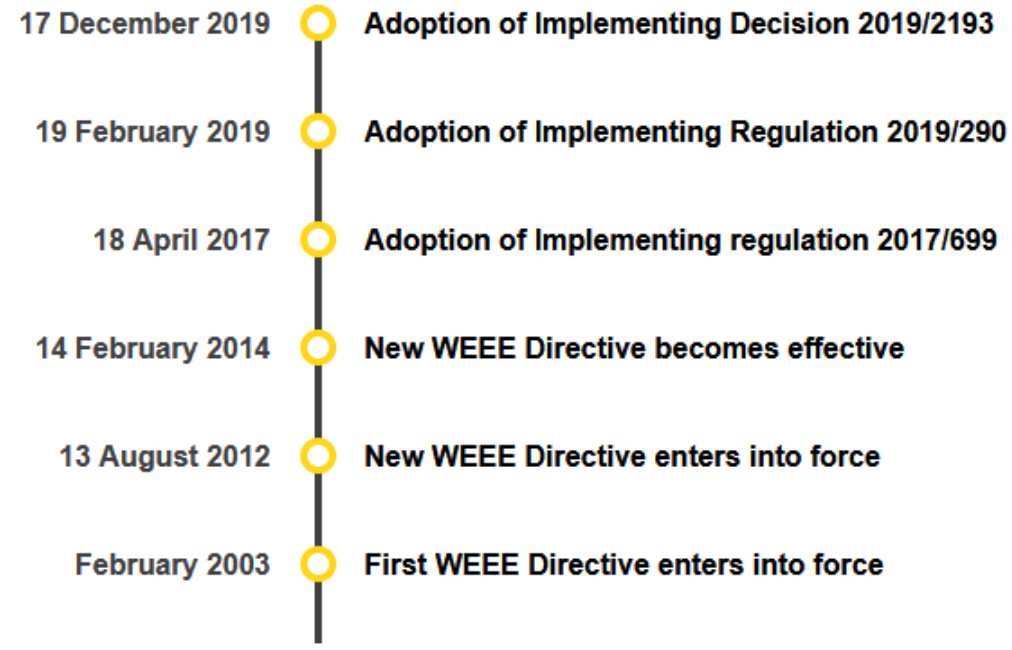
WEEE in the EU

Waste of Electrical & Electronic Equipment

Categories in the EU :

1. Temperature exchange equipment
2. Screens and monitors
3. Lamps
4. Large equipment
5. Small equipment
6. Small IT & telecommunication equipment

Central role of the WEEE Directive





WEEE in the EU

Objectives

Prevent creation of WEEE

Contribute to efficient use of resources

Improve environmental performance of everyone involved in the life cycle of EEE

Means

Separate collection and proper treatment of WEEE, with collection, recovery and recycling targets

Make it harder disguise illegal shipments of WEEE

Harmonize national EEE registers

Through Extended Producer Responsibility



WEEE in the EU

Extended Producer Responsibility - EPR

Environmental protection strategy to reach decrease environmental impact of a product, by making the manufacturer of the product responsible for the entire life-cycle of the product and especially for the take-back, recycling and final disposal, mainly by including environmental costs associated to the life cycle in the market price.

Producer Responsibility Organization

A collective **solution** to manage the EPR through a professional organization financed by producers.

PRO meets legal obligations of producers



Activities of PROs

Collect

Through free standard operations

With robust traceability

Treat

Depollute, recycle & valorise

Contribute to R&D effort

Assure conformity

For producers of equipment

Of operations

Prevent

Resources depletion

Risk management

Transition to circular economy



PMMA in EEE

Used for optical reasons

Concerned EEE

Mainly FPD and Laptops

But also in tablets, phones and other EEE containing a display

Volume

~35kt PMMA waste generated in Europe in 2020

177 t dismantled from Ecologic FPD waste in France in 2021

Outlets

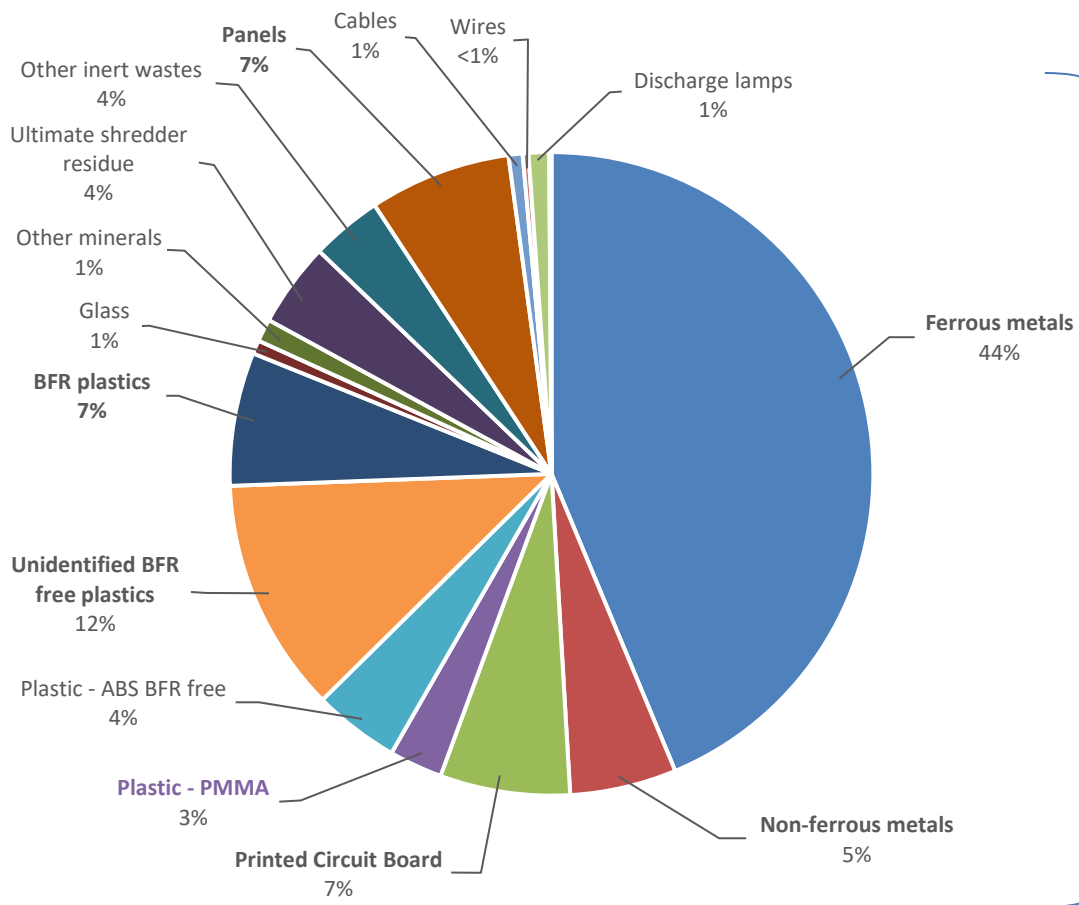
Mainly (covid) barriers and automotive headlight when extracted

Thermal destruction, with or without energetic valorisation when unextracted

When is it extracted and when is it not?



Focus on FPD



Treatment (% in France)

- Manual dismantling – 50%
- Automatic dismantling – 30%
- Direct shredding – 20%

FPD waste composition according to treatment plant used by Ecologic in 2021

Volumes

Around 500kt of FPD waste in Europe in 2020.

Automatic dismantling has highest extraction rate and purity for PMMA extraction



Eco-design perspectives

Commission Regulation (EU) 2019/2021 Laying down **ecodesign requirements for electronic displays**

Annex II – D. Material efficiency requirements

1. Design for dismantling, recycling and recovery

To ensure compatibility with WEEE treatment in the EU

5. Design for repair and reuse

Through 7 years of availability for spare parts

but doesn't concern panel & lightning system

Spreads the PMMA deposit over time

The logo for MMAtwo, featuring the letters 'M', 'M', and 'A' in white on an orange background, followed by 'two' in white on a cyan background.

MMAtwo

Second Generation MethylMethAcrylate

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The EcoLogic logo, with 'Eco' in orange and 'Logic' in green, featuring a green circle with a white dot above the 'i' in 'Logic'.

EcoLogic

La 2^e vie des équipements électriques

A solid orange circle containing the website address.

www.mmatwo.eu



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