



OPIN Workshop

Advanced Materials and Manufacturing

(Composite focus)

12/11/19, Nantes



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LTeN

Advanced materials and
manufacturing

Composites recycling

- United Nations Agenda 2030
- Recycling quality, production and end of life wastes
- Different processes
- Thermal processes
- Mechanical recycling
- Some on going projects, issues

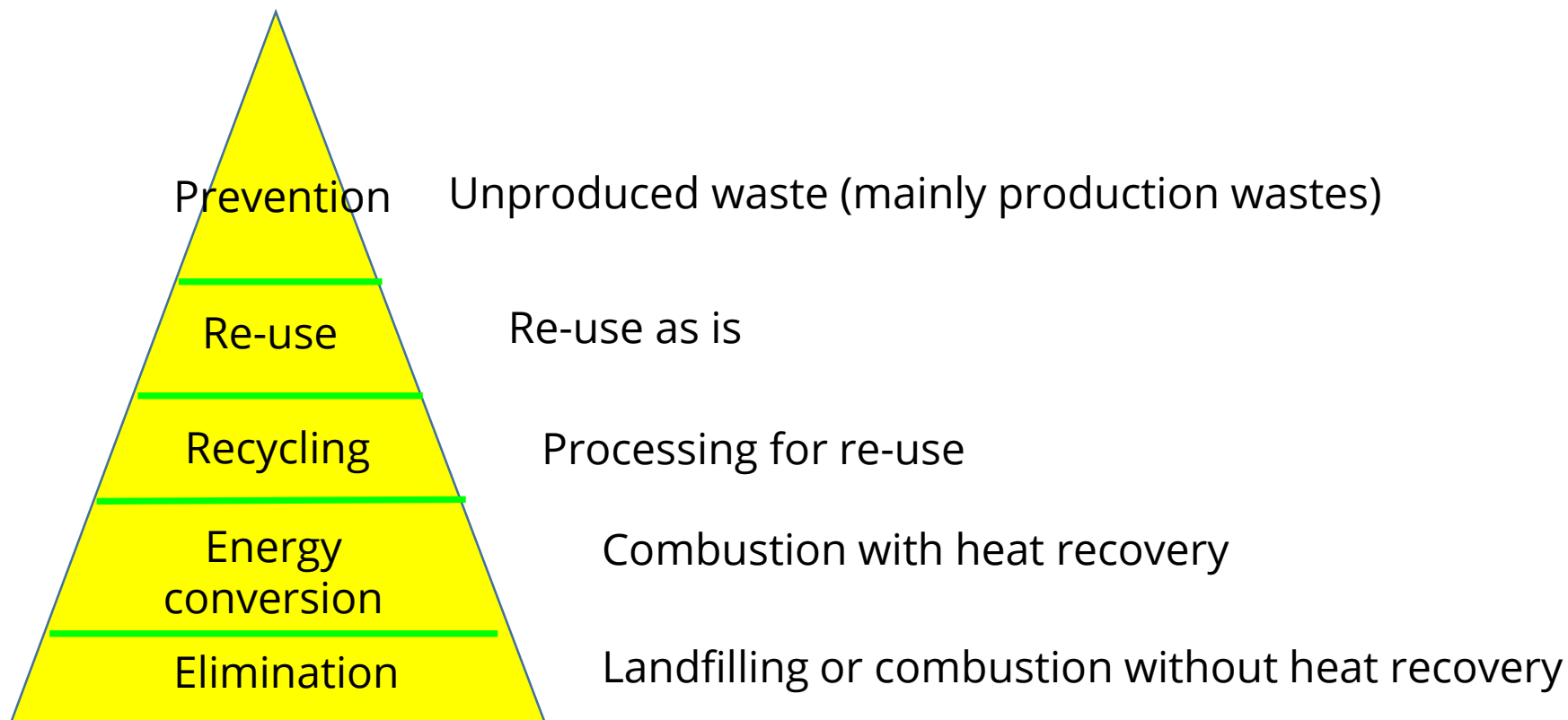
• Agenda for Sustainable Development

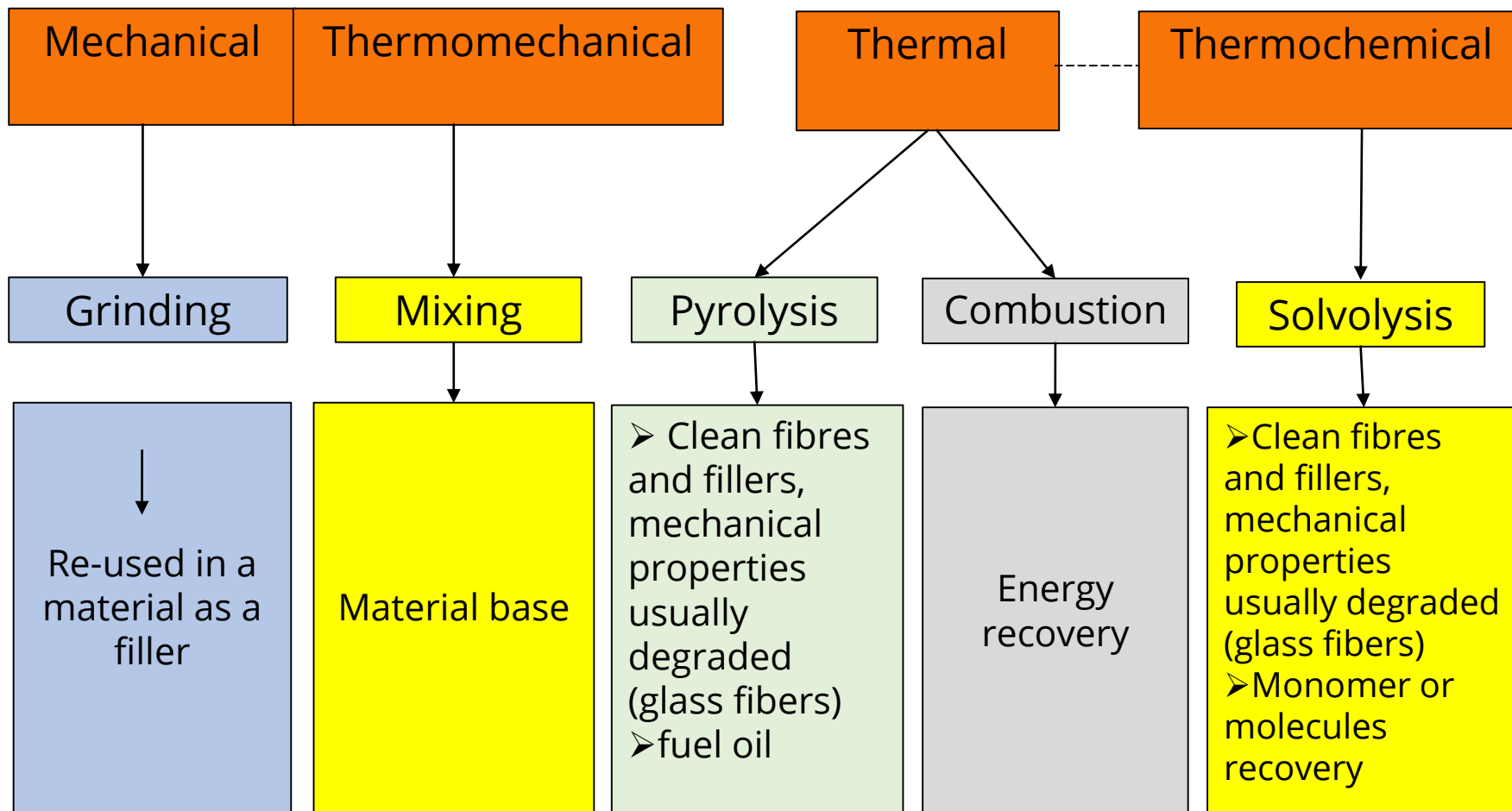
In target 12.5, Member States decided to "by 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse".

• Report 2019 :

Step back in waste management (J.P. Moatti)

Production and end of life wastes





Crushing is mandatory for all large parts.

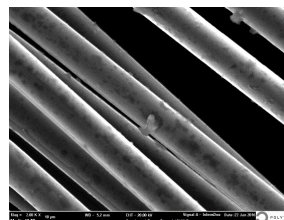


- Cement factories: works but low level recycling

- Pyrolysis and solvolysis

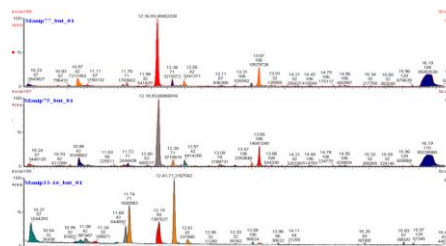
- Fibers quality

- Glass
- Carbon



- Molecules

- Epoxies
- Polyesters



- Cost efficiency
 - Carbon fibers composites
 - Glass fibers composites



Mechanical recycling (ABVal project)



Some on going projects, issues

- Arkema: Elium[®] resin
- Thermosets and thermoplastics
- Fibers alignment
- Large parts (boat hulls, wind turbine blades)

<https://www.livingcircular.veolia.com/en/industry/how-can-wind-turbine-blades-be-recycled>

7th June 2018

“Up to 50,000 tons of rotor blade materials are expected to arrive at waste reception centres between now and 2020 **without having an established recycling** solution.”

<https://www.gouvernement.eu/fr/wind-turbine-blade-recycling/93832/> 4th July 2019

“The partnership intends **to explore other**, potentially more sustainable recycling options **including pyrolysis and mechanical recycling.**”

Q & A

Interreg



North-West Europe

OPIN

European Regional Development Fund

Thank you!