



Beyond the hype: delving into the environmental impacts of supercritical fluids' applications

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Beyond the hype: delving into the environmental impacts of supercritical fluids' applications

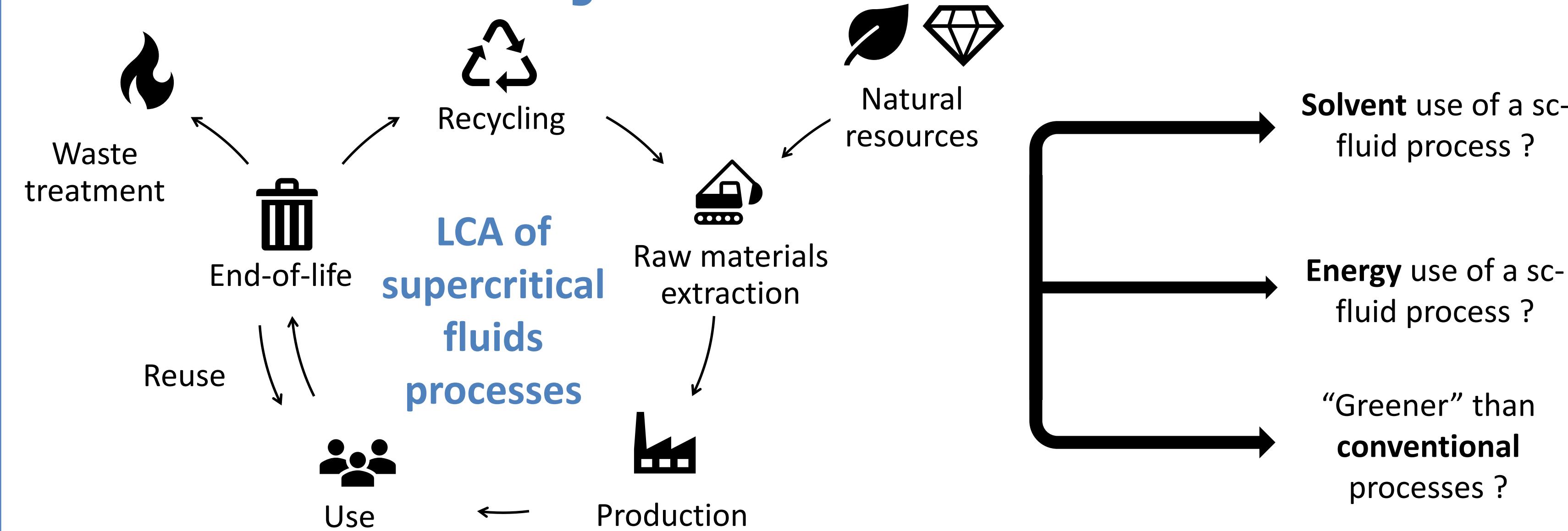
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Context and objective

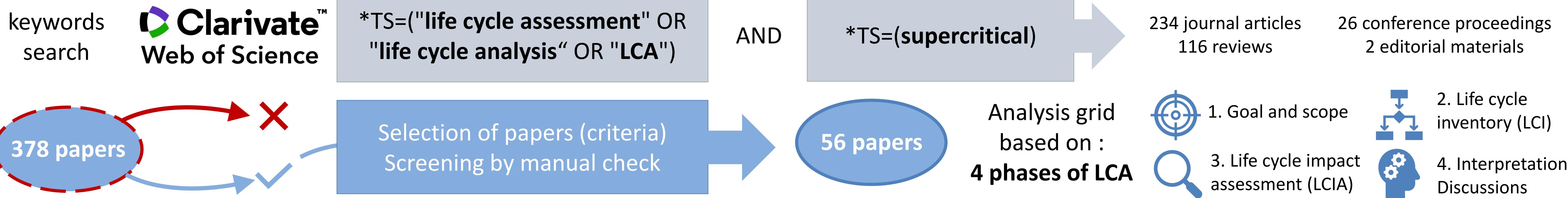


Objectives :

- **Compile** all papers related to LCA (Life Cycle Assessment) studies on supercritical fluids processes
- **Analyze** the papers with an analysis grid derived from the four phases of LCA

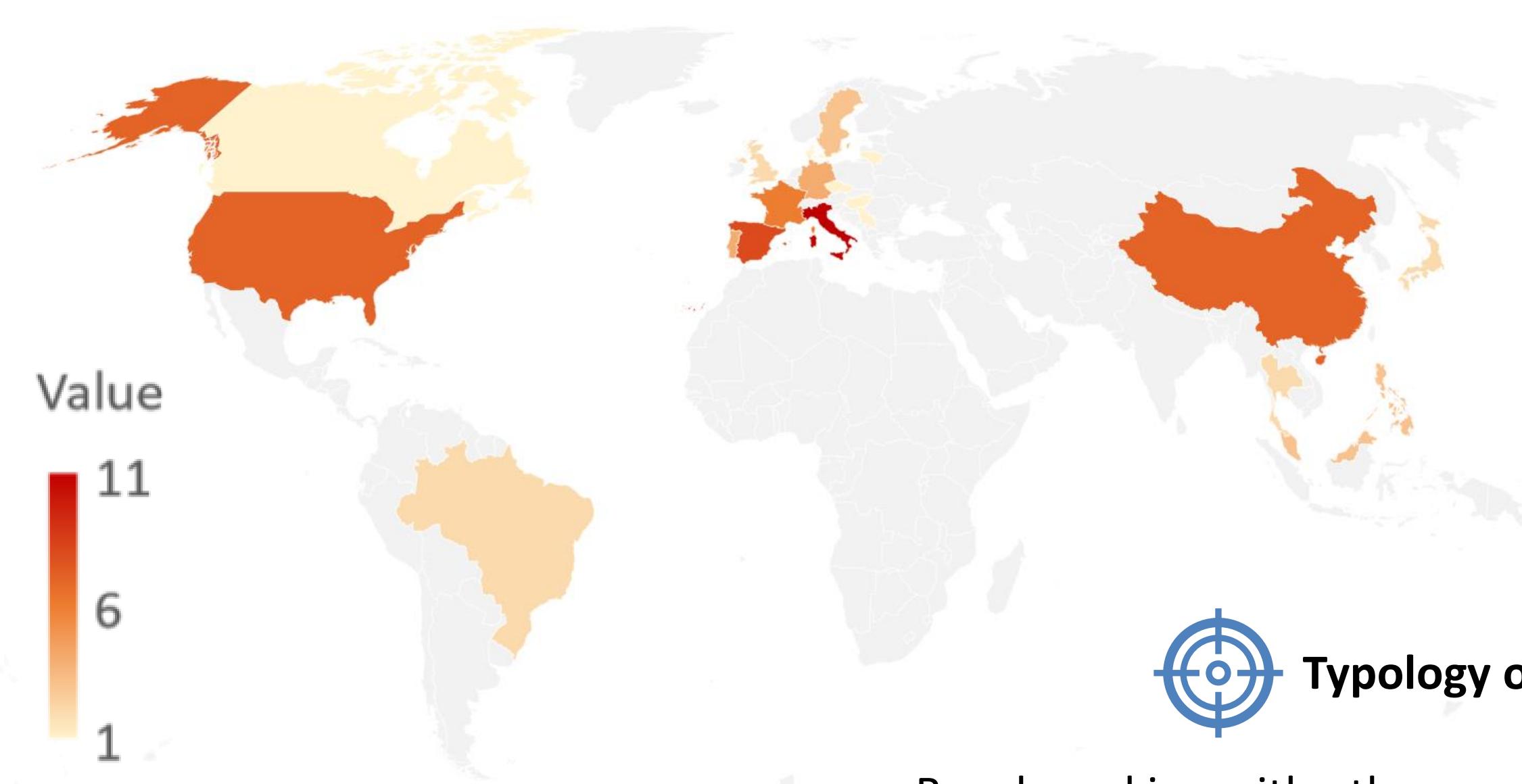
Articles collection

*TS = Topic (Title, Abstract, Author Keywords, Keywords Plus®)



Results

Countries

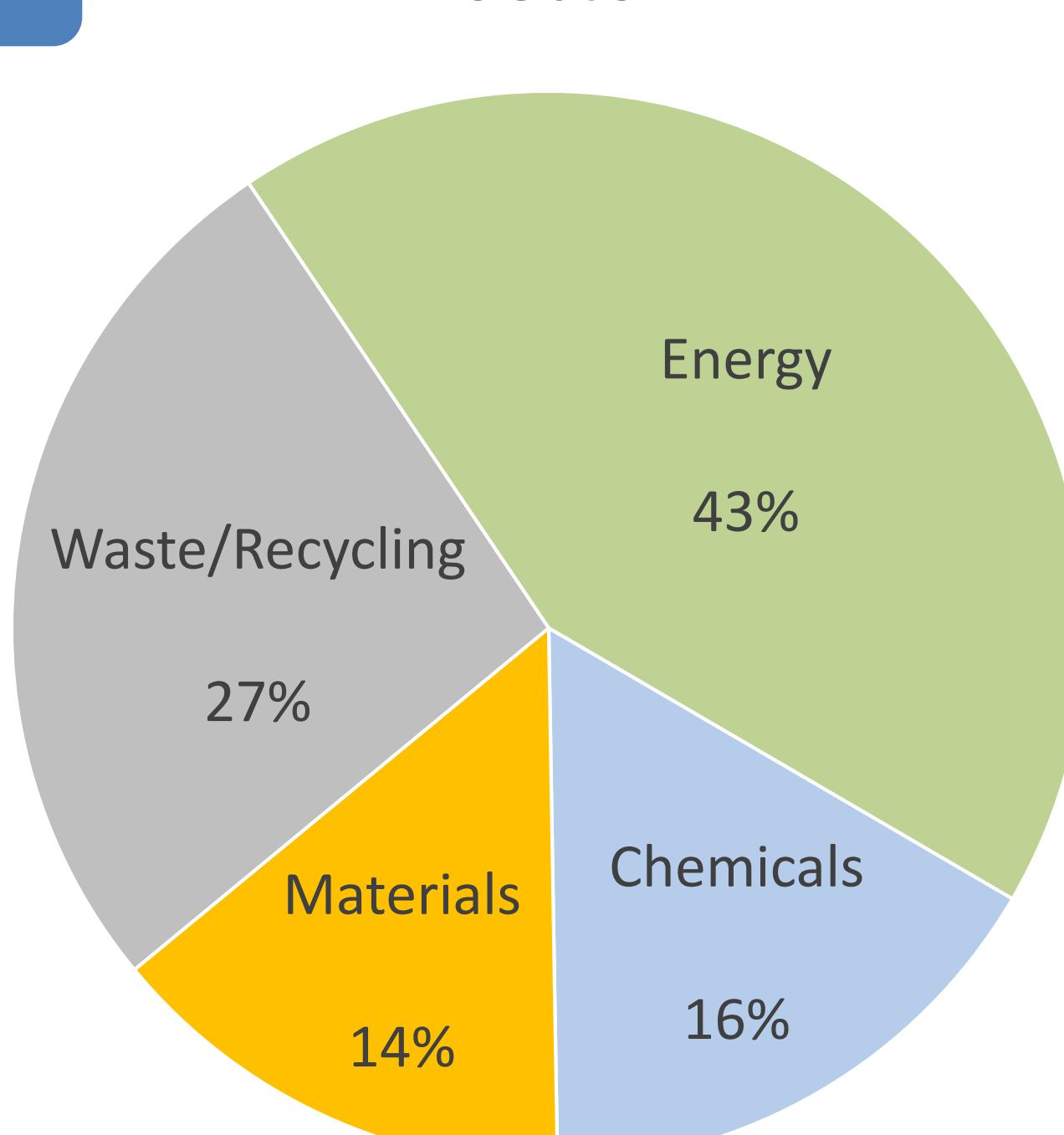


1. Goal and scope

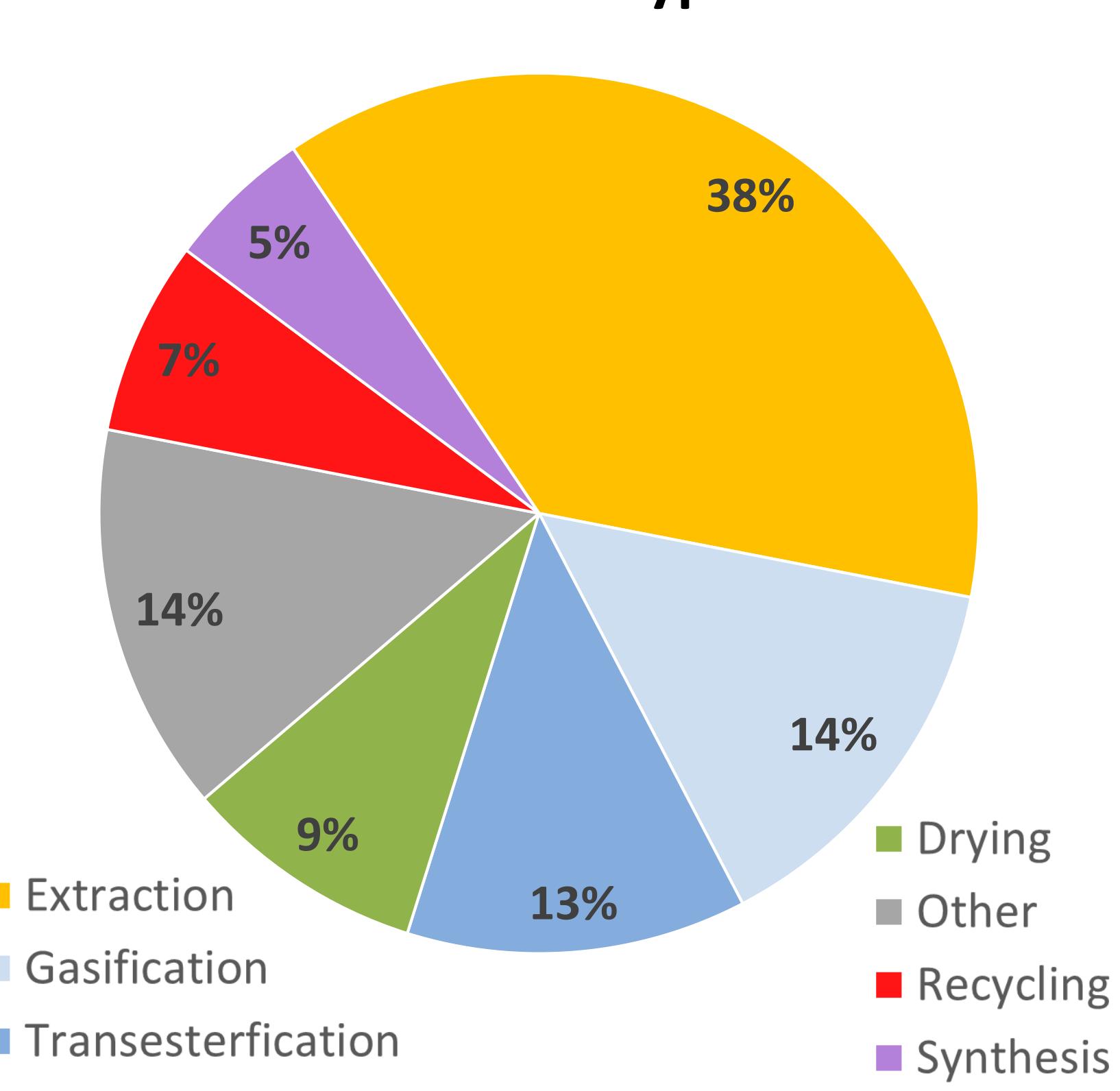
Typology of goal :

Benchmarking with other processes	41%
Foot-printing	32%
Eco-design (optimization)	38%

Sector



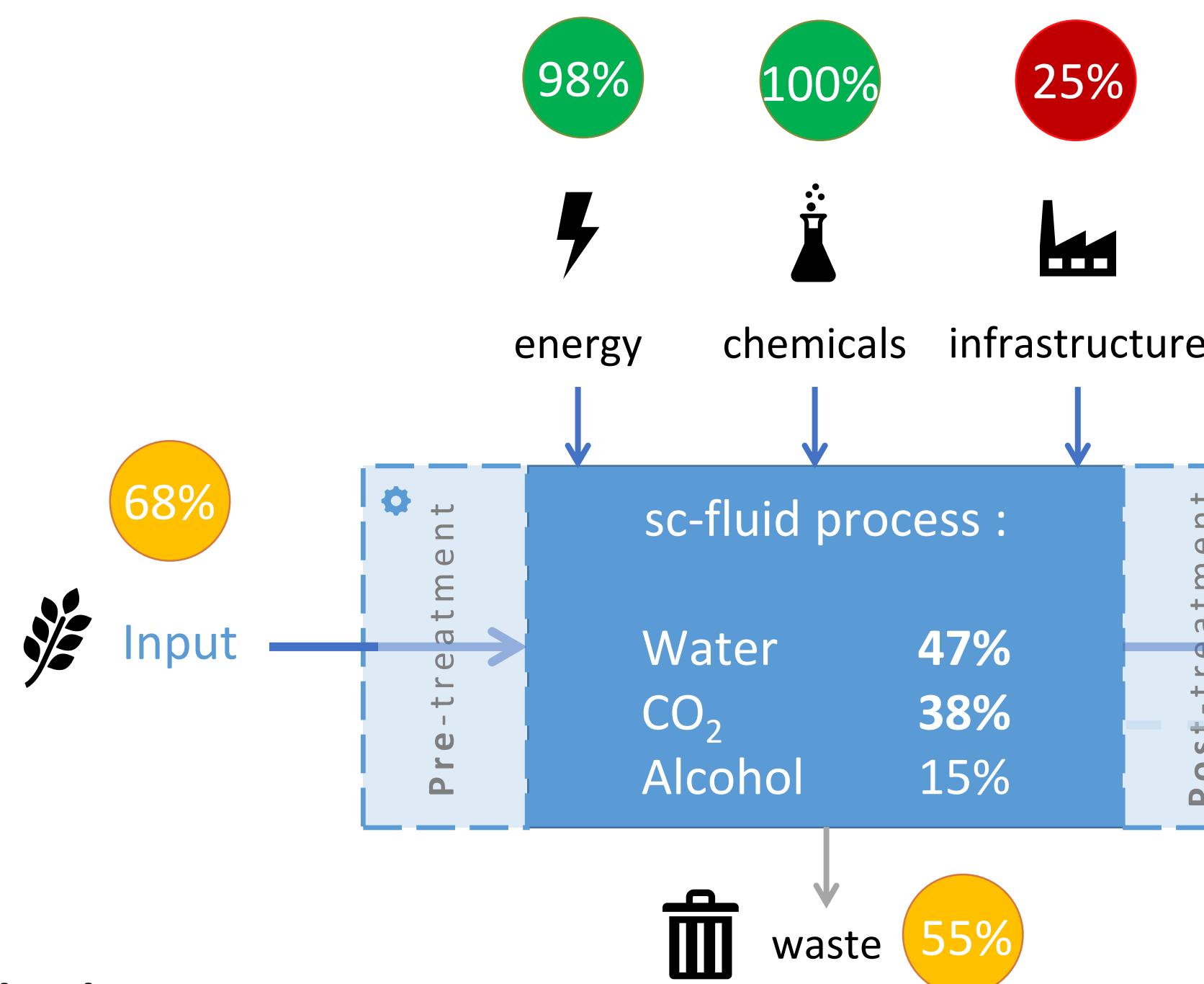
Process type



2. Life cycle inventory (LCI)

% of the elements considered in the studies :

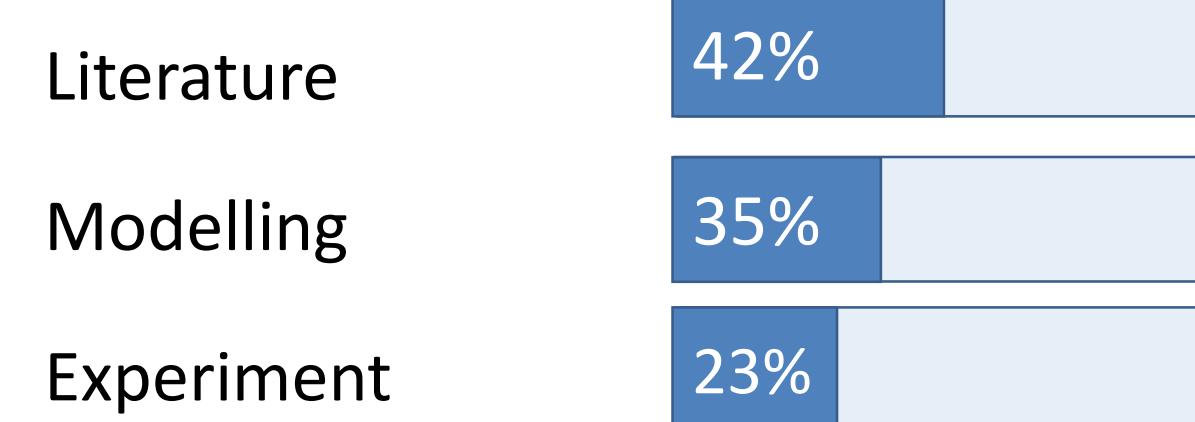
e.g.
Algae
Biomass
Rosemary
coffee beans
carbon fibers



Background database :



Foreground data :



Sc fluid use (kg / kg input)

Lab-scale range (39%)

Pilot scale range (10%)

Industrial scale range (33% + 19% upscale)

Energy use (kWh / kg input)

[1 – 200]

[0.3 – 20]

[0.1 – 20]



3/4. Life cycle impact assessment and interpretation

