



CALiMERO

IMPROVING BIO-BASED INDUSTRIES LIFE CYCLE SUSTAINABILITY

**Contributing to make
bio-based industries
more sustainable**



Industry Case studies anaLysis to IMprove EnviROnmental performance and sustainability of bio-based industrial processes

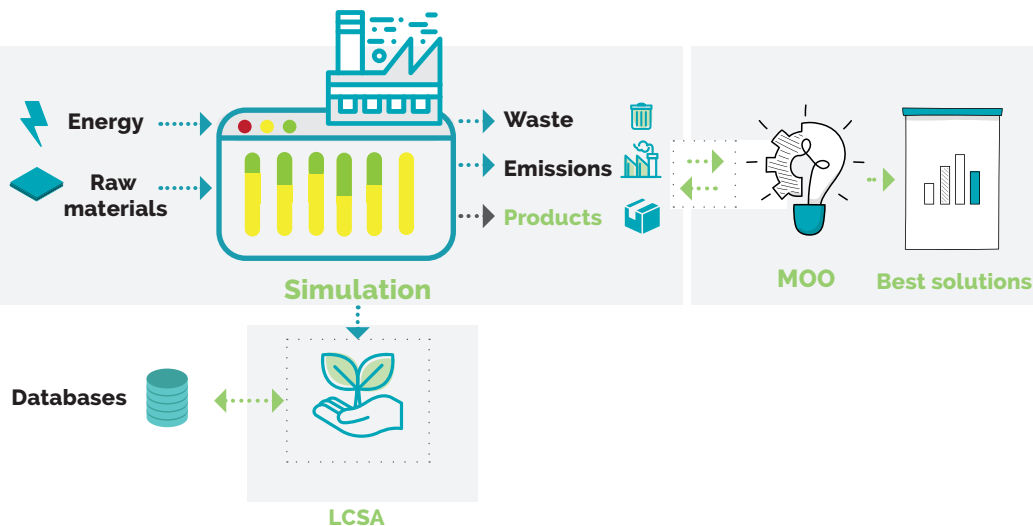


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Expected outcomes

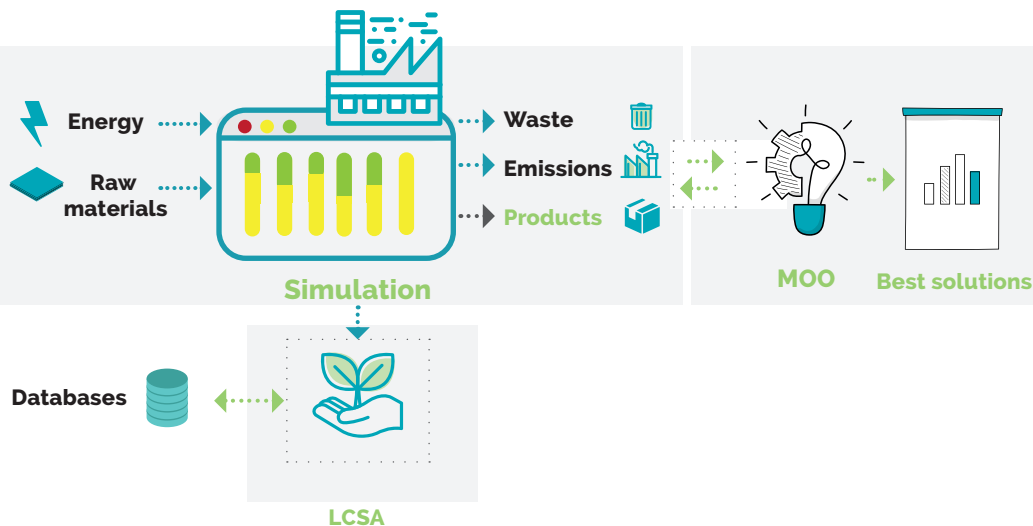
- Barriers and incentives of bio-based industries to apply sustainability life cycle thinking approaches
- Improved Life Cycle Sustainability Assessment (LCSA) methodologies to assess bio-based products
- Multi-objective optimization framework to optimize bio-based industrial processes with process simulation and sustainability criteria
- Industrial solutions to improve life cycle sustainability performance
- Guidelines to apply LCSA and find solutions for industrial processes
- Monitoring procedures of sustainability performance at plant



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The context



Greenhouse gas emissions (GHG) and environmental impacts are a concern to Europe and its citizenship. That is why, the continent is looking for solutions to this problem from different perspectives.



Finding sustainable solutions at industrial level requires several trial-error cycles and, thus, large amount of resources.



Transitioning to a bioeconomy or a bio-based low-carbon economy with circular material flows is a high political priority, as part of the European Union Industrial Policy Strategy, the European Green Deal, the 2030 Climate Target Plan and the Bioeconomy strategy.



CALIMERO will provide a framework and some guidelines to help **bio-based industries** to evolve in terms of **efficiency and sustainability**.



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CALIMERO's contribution

CALIMERO aims to do specific developments to assess the sustainability performance of bio-based industries that currently PEF (Product Environmental Footprint) method does not consider:

The problem is that **it presents relevant gaps**, which **CALIMERO** aims to fill:



Biodiversity



Ecosystem services



Relevant toxicity characterization factors



Dynamic carbon footprint



Circularity



Criticality



Socio-economic indicators

With all the PEF indicators, the expertise of the industry and the use of Multi-Objective Optimization algorithms, **CALIMERO** will try to help decision-makers with **feasible and more sustainable industrial solutions**.

This way, **CALIMERO** aims to contribute to a **greener economy** in Europe.



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EREKS |



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