

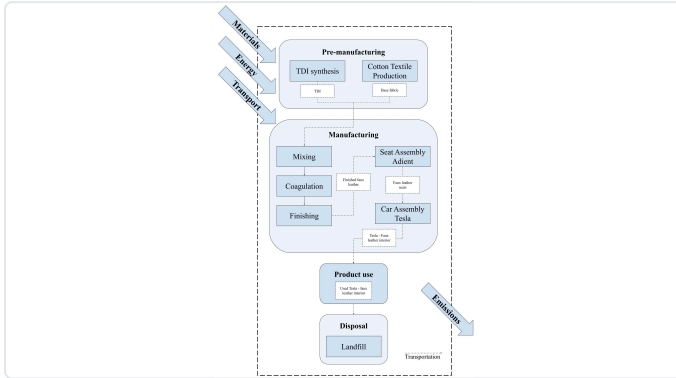
# Faux versus Real Leather: A Life-Cycle Assessment

University of Toronto, MIE315 (Design for the Environment) · Apr 2023 · Group of four · Consultant report

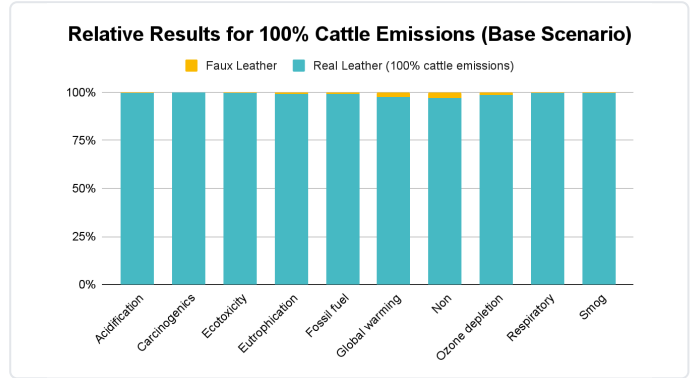
## LCA and analysis

### A life-cycle assessment advising Tesla on polyurethane faux leather versus bovine leather for cabin interiors.

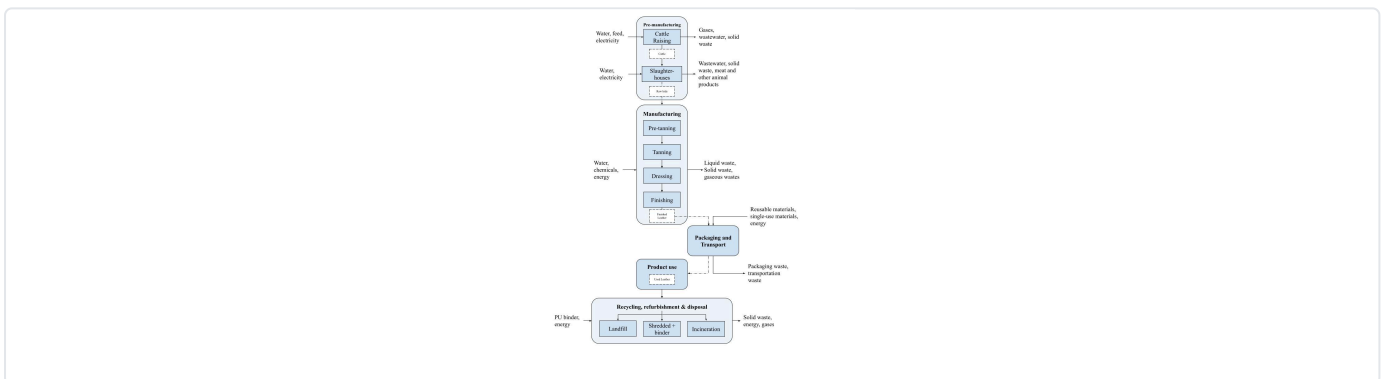
A consultant's report comparing petrochemical-based polyurethane faux leather against real bovine leather for Tesla automotive interiors, using a functional unit of one square metre. The study ran a process-based life-cycle assessment alongside financial, societal, and uncertainty analyses to reach a recommendation.



Life-cycle process-flow diagram for the faux-leather interior.



Relative environmental impact, faux versus real leather, across categories.



Life-cycle process-flow diagram for the real-leather interior.

## Method

A streamlined and then process-based LCA in OpenLCA used the TRACI 2.1 impact method across the full material life cycle, with a net-present-value financial analysis and a stakeholder-based societal analysis layered on top.

## Result

Across impact categories, faux leather came out ahead on the environmental and societal axes, with a net present value of savings around \$11 billion, so the report recommends that Tesla adopt faux leather.

## SELECTED REFERENCES

- "A global study on the life cycle assessment of the modern cow leather industry," Discover Sustainability (Springer), 2025.
- "Transforming the Leather Industry: A Review on Leather Alternatives," ScienceDirect, 2025.

Engineering portfolio brief. Course and team project; contribution as noted above.