



TNO innovation
for life

› **BEVSIM TOOL | GREEN WEEK EVENT**

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› BEVSIM

INTRODUCTION & FEATURES

Battery Electric Vehicle Sustainability Impact Assessment Model (BEVSIM)

- › Web-based tool based on TNO's DIAMONDS platform with R Shiny programming suite and built-in database on lifecycle impacts.
- › **Best-in-class LCA models** for materials production, processing, Use Phase, EoL fate and EoL recycling processes.
- › **BEV versus ICE comparison possible** for segment C and D passenger cars.
- › **Customisable** → Model a full car, a sub-system, or a part for LCA, LCC, Circularity Analysis
- › **Possibility to include customer, user specific datasets**
- › **Download Word report and extended Excel results**
- › **Version control** possible and easy to update LCI datasets

Compare Design Alternatives

Designed For NON-LCA Experts

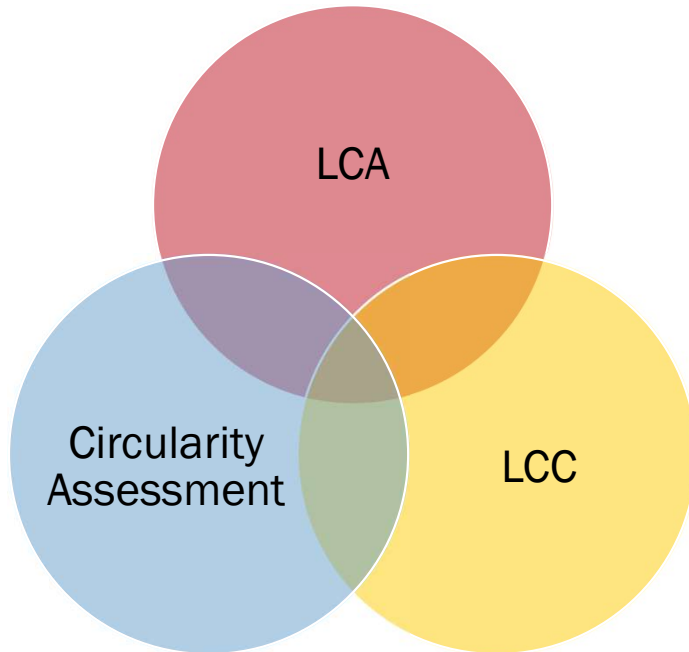
Early Sustainability Evaluation

Faster LCA Results

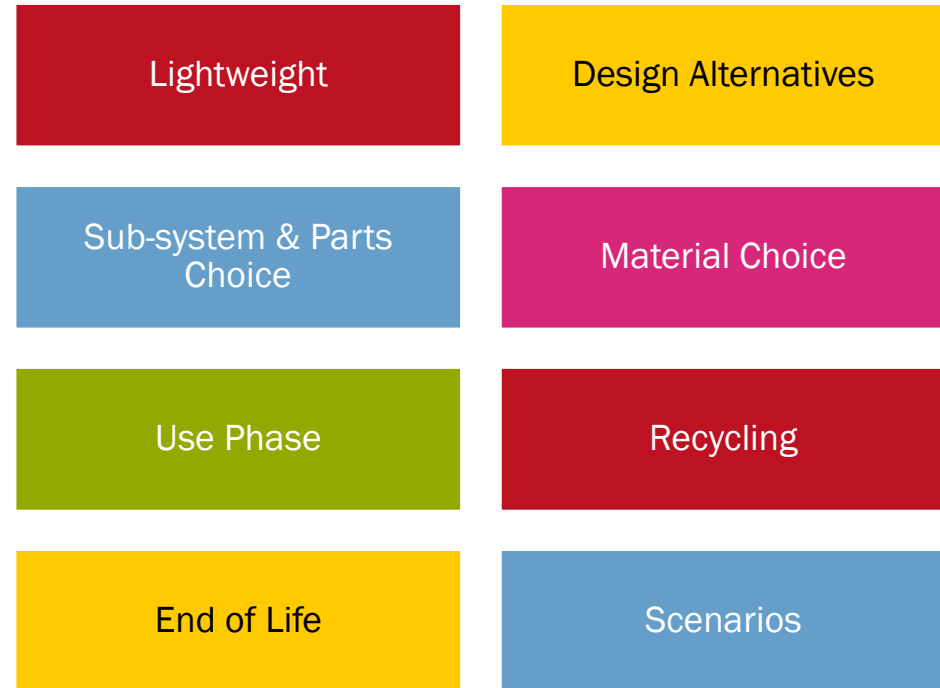
Scenarios

BEVSIM CAPABILITIES

Single Tool



Measure Impacts



› SIMULATION WORKFLOW

STEP 2: EDIT “USER DESIGN”

In the “Edit Parts” Tab, one can see and edit the individual parts, materials and processing.

SubSystem	Part	Material
Chassis	Lower front control arms	Aluminium, primary, ingo
Chassis	Rear control arms	Aluminium, primary, ingo
Chassis	Other (Corner Suspension)	Steel HDG (World Steel)
Chassis	Other (Corner Suspension)	Steel PHRC (World Steel)
Chassis	Steering Knuckle	Steel HDG (World Steel)
Chassis	Steering Knuckle	Steel PHRC (World Steel)
Chassis	Rotor	Cast iron
Chassis	Assembly Calliper	Steel HDG (World Steel)
Chassis	Assembly Calliper	Steel PHRC (World Steel)
Chassis	Other (Braking Systems)	Steel HDG (World Steel)

Showing 1 to 10 of 36 entries

BEVSIM v3.38

SubSystem: Body

Part: BIW

Material: Steel HDG (World Steel) [BH, MS, HF, DP, ▼]

Process 1: Cold Stamping, Steel

Process 2: []

Process 3: []

Mass (Kg): 213

Amount (Kg): []

Recycled: 1

Eff: 58

Eff: 100

Eff: 100

Mass (Kg): 185.92

Amount (Kg): []

Recycled: 1

Eff: 45.6

Eff: 100

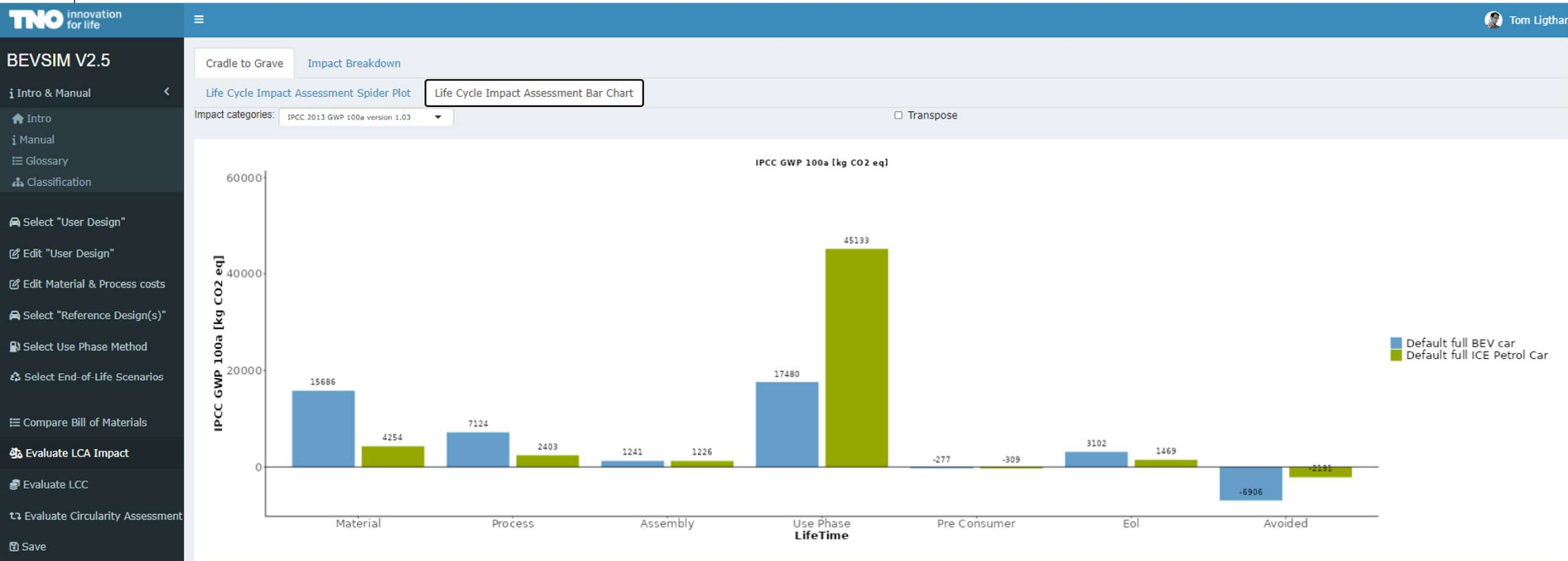
Eff: 100

Or add or delete parts.

When editing a new part, complete the form and press Update. (a maximum of three processes per part can be chosen).

› SIMULATION WORKFLOW

STEP 6: COMPARE “USER DESIGN” WITH “REFERENCE DESIGN(S)”



› **CLOSING REMARKS**

- › BEVSIM is designed to assess the environmental, circularity, and economic impacts of passenger vehicles across the **entire life cycle**
- › Automotive application specific tool with simpler design that offers **significant savings in time and effort for performing LCA studies**
- › **Designed for non-LCA experts** for early screening of design alternatives in R&D phase
- › **Consistency across LCA studies**
- › Lower total cost of ownership compared to full suite LCA software

› **Can I have access to BEVSIM?**

- › **Yes**, on a case to case basis! Please reach out to us by email (tom.ligthart@tno.nl) to discuss your specific requirements.



Online launch:

[https://almaproject.eu/
media/](https://almaproject.eu/media/)



CONTACT DETAILS

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› **THANK YOU FOR
YOUR TIME**

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