Overview

- Previous Cost Results
- Project Goals
- Recommendations
- EPS Analysis
- Sensitivity Studies
- Conclusions
Previous Private Cost Results

- All Aluminum design has lowest private cost
- Use phase dominates in the total cost

Project Goal: Minimize Environmental Impact

- Measure impacts over car lifetime (LCA)
- Use Swedish EPS model
- Measure impact on five “safeguard subjects”
  - biodiversity, health, production, resources, aesthetics
Recommendations

- Since All Aluminum design has lowest lifetime impact, we recommend all Aluminum BIW

Assumptions/Values

- Focus on impacts in Germany
- High recycling ELUs: 95% for Al, 85% for steel
- ELUs add linearly; impact of 1st ELU = impact of last ELU
Summary of Life Cycle Analysis

![Bar Chart]

Phase in Life Cycle

- Raw M.
- Man.
- Use
- Disp.

ELU

- Steel
- Al
- SMC/Alin.
# Tradeoffs and Priorities

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Even with 0% Al recycling, all Al is still better than steel, and is equal to or less than other combinations.

Investigation of changing safeguard subject values

- Order or importance: energy, health, biodiversity, productivity
- If energy costs increase, Al will become even more preferable because the difference in ELU increases proportionally.
Conclusions

- Recommended Choice is All-Aluminum
- Use Phase Dominates Environmental Impacts
- Recommended Choice is not Sensitive to Recycling or Subjective ELI Valuation.

Hidden Agenda

- EPS method forces general direction towards sustainable development by giving greater priority to:
  - Recycling and dematerializing
  - Global warming and ozone depleting substances