RYB - LIGHT CASE STUDIES

Context

The RYB replication analysis examines sustainability practices in the outdoor hard goods industry, focusing on four producers across different categories. Key findings include:

1. **Progress in Eco-Design**: Companies are incorporating sustainable materials and processes but primarily focus on post-industrial recyclables rather than full circular economy models.
2. **Challenges in Post-Consumption Recycling**: Individual efforts to manage take-back schemes and post-consumer recycling are limited due to economic and logistical barriers.
3. **Need for Collaboration**: A shared take-back infrastructure and centralized recycling hubs are critical to drive cultural shifts in consumer behavior, enabling effective recycling and material reuse.
4. **Opportunities for Improvement**: Advancing eco-design for disassembly and enhancing recycling processes remain essential for sustainability progress.

By fostering collaboration and shared systems, companies can make circular economy approaches more feasible and impactful.

Final considerations

The key technical take outs from the light-case studies performed are summed up in the table below:

	DISASSEMBLING (easy/complex)	PLASTIC QTY (high/medium/small)	ECO-DESIGN STATUS (no /basic/good)
Rollerblade Inline Skates	EASY	H-M	GOOD
Dainese Motorboots	COMPLEX	H-M	BASIC
Forma Motorboots	COMPLEX	H-M	NO
Dainese Protections	EASY	H	GOOD
Rudyproject Helmets	EASY	M	BASIC
Rudyproject Eyewear	EASY	S	BASIC
Selle Italia Saddles Tech Green	EASY	M	GOOD
Saddles Traditional	COMPLEX	S	NO

Key Learnings and Considerations:

1. **High-Quality Recyclable Plastics**: The plastic materials (polymers/technopolymers) used in the hard goods sport industry are of xtremely high quality, therefore if properly disassembled and recycled the secondary raw materials can be of high "quality and value".
2. **Economic Challenges for Recycling:** Limited end-of-life product volumes make it economically difficult for individual companies to sustain post-consumer recycling and take-back programs.
3. **Eco-Design Improvements Needed**: Effective post-consumption recycling is achievable with current technologies but requires enhanced "fit-for-disassembling, made-for-recycling" designs.
4. **Standardized Multibrand Protocols**: A unified approach to pre-select recyclable products is crucial for making plastic recycling economically viable.
5. **Recycling Digital Passport (RDP)**: Introducing an RDP can improve plastic differentiation, increase the quality and reuse potential of recycled materials, and support ongoing digitalization in development, production, and logistics.
6. **Shared Take-Back and Recycling Schemes:** Implementing collaborative collection schemes (e.g., EPR systems) and centralized recycling hubs can optimize recovery and recycling costs.
7. **District-Level Recycling**: Coordinating recycling at a district level enables a closed-loop system, improving material reuse and overcoming the limitations of individual company recycling efforts.

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