



LIFE  
RESKIBOOT



## TAKE-BACK & RE-USE SYSTEM FROM SKI BOOT RENTALS FOR **SORTING AND RECYCLING OF MULTIPLASTICS COMPONENTS**

### PROBLEM TARGETED



**9,4 million kg**

of virgin raw materials used for new ski boot production (6,4 million Kg of thermoplastic materials for the external part and 3 million of Ethylene-Vinyl Acetate and Polyolefinbased for the liner)



**9 million of kg**

of post-consumer ski boots sent to disposal as waste



**33.800 tons**

of greenhouse gas emissions expressed in CO2 equivalent, released in producing virgin materials



**963.000 GJ**

of oil and natural gas be required as feedstock and fuels to produce virgin raw materials

### SOLUTION LIFE RESKIBOOT



Will implement a new model of circular plastic economy, in line with the European Strategy for Plastics in a Circular Economy, over the full product life cycle, including a take-back and hard-outer shell re-use service for ski rentals, to manufacture ski boots from recycled soft and hard multi plastics.

## THE PROJECT OBJECTIVES ARE:

- Launch on the market of ski boots made with about 90% of recycled raw materials (both for the construction of the external part and the internal part) obtained from postconsumer ski boots turned into secondary raw materials after a sorting method, based on electromagnetic effect, able to achieve a 95% separation efficiency for the polyurethane and foamed materials.
- Manufacture 1.000 pairs of ski boots, characterize and use them on real slopes to prove that they can be commercialized since perform well for skiers both in terms of comfort, technical features and safety properties.
- Develop an optimized manufacturing process for ski boots using about 90% recycled raw materials and eliminating processing offcuts that in current conventional processes are up to 40% of foamed materials used for the liner.
- Define a circular economy business model for ski rentals based on a take back system for postconsumers ski boots to be collected, sorted and turned into secondary raw materials.
- Define a new service for rentals to reuse the hardouter shell and substitute the internal liner with a recycled one to overcome the actual 3years rapid degradation of liners that imply that the whole ski boot is landfilled.
- Get an at least 7% reduction of ski boot final cost due to the combined effect of zeroing the manufacturing waste streams and the reduced use of virgin raw material.
- Measure the environmental and circularity performance of the new product system and show the improvement compared to the current baseline situation.
- Provide guidelines for market replication of ski boots that are designed to be more easily and efficiently separated, to be also applied to other types of sport footwear.
- Realize a certified environmental product declaration of the new ski boot and provide product category rules for other ski boots producers. At the end of the project 1.000 ski boot pairs for adults will be manufactured and tested by skiers to demonstrate comfort and technical performances.

## PROJECT DETAILS

**PROJECT TITLE:** Take-Back & Re-Use system from ski boot rental for sorting and recycling of multiplastics components.

**START DATE:** 01/09/2020 **END DATE:** 29/02/2024 **TOPIC:** Environment **SECTOR:** Waste **EU CONTRIBUTION:** 1,412,007 Euro.

### 7 PARTNERS



*With the contribution of the  
LIFE Programme of the European Union.*

**LIFE19 ENV/BG/000059**

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