

LIFE RESKIBOOT

MID-TERM SECTORIAL TECHNICAL WORKSHOP

NEW MODELS FOR CIRCULAR PLASTIC ECONOMY:
innovative solutions for collection, sorting and reuse of secondary raw materials from post-consumer products

Project Overview



LIFE RESKIBOOT Project

General Info

Take-back and re-use system from ski boot rentals for sorting and recycling of multi-plastics components.

RESKIBOOT value proposition:

- ▶ Provision of high-quality and cost-competitive ski boots made with recycled materials.
- ▶ Zeroing plastic post-process waste.
- ▶ Decreasing end-of-life disposal (take back and re-use service for post-consumer ski boots).



LIFE RESKIBOOT Project

General Info

- ▶ Project location:
 - ▶ Bulgaria, Italy, Belgium
- ▶ Budget info:
 - ▶ Total amount: 2,819,037 €
 - ▶ % EC Co-funding: 55
- ▶ Duration:
 - ▶ Start: 01/09/2020
 - ▶ End: 29/02/2024



LIFE RESKIBOOT Project

RESKIBOOT partners:

- GRIFONE S.R.L. - Bulgaria - Coordinator
- DALBELLO S.R.L. - Italy
- EPSI - Belgium
- Plastic Sort S.R.L. - Italy
- Rent a Sport Italia S.R.L. - Italy
- Studio Fieschi e soci S.R.L. - Italy
- University of Bologna (DICAM) - Italy



LIFE RESKIBOOT Project

Skiboot, a European product:

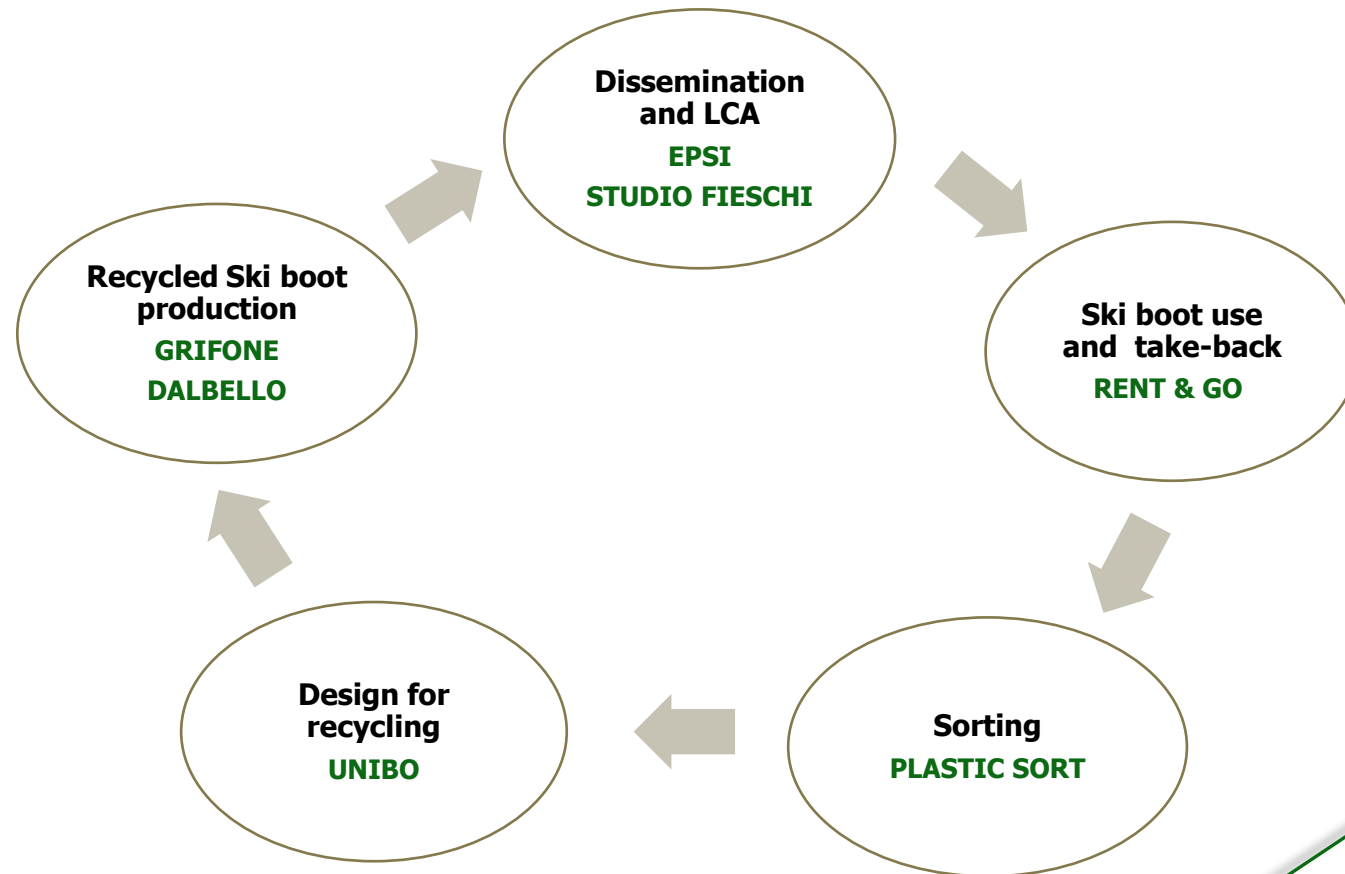
- ▶ Total number of skiboos produced every year: 3,5 million of pairs.
- ▶ Skiboos produced in Europe: 98%.
- ▶ 9,4 million kg of virgin raw materials used for new ski boot production.
- ▶ Approx. 9 million kg of post-consumer ski boots sent to disposal as waste.
- ▶ 33.800 tons of greenhouse gas emissions, expressed in CO2 equivalent.
- ▶ 963.000 GJ of oil and natural gas required as feedstock and fuels to produce virgin raw materials.



LIFE RESKIBOOT Project

Project highlights:

LIFE RESKIBOOT defines a circular economy business model to launch on the market a ski boot made with soft and hard recycled multi-plastics obtained from post-consumer ski boots turned into secondary raw materials after a sorting method based on electromagnetic effect.



LIFE RESKIBOOT Project

Objectives

Production of 90% recycled ski boot:

- ▶ Recovery of post-consumer ski boots from rentals.
- ▶ Sorting and re-use of recovered ski boots as secondary raw materials.
- ▶ Characterization of secondary raw material properties and comparison with virgin raw materials.
- ▶ Design optimization and component manufacturing.



LIFE RESKIBOOT Project

Objectives

Recycled ski boots validation:

- ▶ Manufacture 1000 pairs of ski boots with secondary raw materials.
- ▶ Characterize their properties in terms of comfort, technical features and safety with the standard procedure for commercial products.
- ▶ On-snow test with final ski boots to prove that they can be commercialized.



LIFE RESKIBOOT Project

Objectives

Develop an optimized manufacturing process:

- ▶ Utilization of 90% recycled raw material.
- ▶ Elimination of processing offcuts (up to 40% in foamed materials).
- ▶ Improve product design in order to make the recycling process easier and minimize the operations needed.



LIFE RESKIBOOT Project

Objectives

Implement a new circular economy business model:

- ▶ Define a take-back system for rentals, in order to collect post-consumer ski boots to be turned into secondary raw materials.
- ▶ Define a new service for rentals to re-use the outer shell and substitute only the internal liner with a recycled one.
- ▶ Get at least 7% reduction of ski boot final cost due to the reduce use of virgin raw material.
- ▶ Provide guidelines for market replication, to be applied also on other types of sport footwear.



LIFE RESKIBOOT Project

Objectives

Monitor environmental and circularity performance:

- ▶ Measure the improvement compared to the actual baseline (LCA study).
- ▶ Realize a certified Environmental Product Declaration (EPD) and provide Product Category Rules (PCR) for other ski boot producers.
- ▶ Communicate widely the results of RESKIBOOT to Professionals, Companies, Academia, Research Institutes and ski boot customers.



LIFE RESKIBOOT Project

Objectives

DURING the project

- ▶ 3.268 kg of waste not sent to landfill, due to sorting and recycling of ski-boots components
- ▶ 12 tons of reduced greenhouse gas emissions, expressed in CO2 equivalent, which would be released in producing virgin materials
- ▶ 308 GJ of oil and natural gas not required as feedstock and fuels to produce virgin raw materials

3 years AFTER the project

- ▶ 36.320 kg of waste not sent to landfill, due to sorting and recycling of ski-boots components
- ▶ 130 tons of reduced greenhouse gas emissions, expressed in CO2 equivalent, which would be released in producing virgin materials
- ▶ 3.716 GJ of oil and natural gas not required as feedstock and fuels to produce virgin raw materials



THANK YOU FOR THE ATTENTION!



STUDIOFIESCHI
& SOCI
sostenibilità su misura

