

Desafío VETA PODEROSA

CONCEPTUALIZATION OF THE CHALLENGE

From waste to a new business model



● CHALLENGE

How could we generate sustainable and inclusive business models using tire waste with a circular economy approach?

● STRATEGIC OBJECTIVE

Develop a strategy to give value to tires in disuse through circularity, promoting traceability and ensuring regulatory control and the reduction of environmental liabilities associated with this product.

● BACKGROUND

- Currently there is no central collection point for tires and therefore there are unused tires that need to be treated and managed properly.
- Some companies remove tires from the temporary collection points that exist in Poderosa, but there is not enough traceability to ensure their safe final disposal.
- The current transport contractors do not have final disposal costs explicitly stated in their operating costs, making it difficult to incorporate them into contracts.
- Need to incorporate more circular business models and processes, promoting strategies such as transforming the tire into raw material through material recycling, possibility of extending the life of the tire, among others.
- Tires are chosen because they generate a highly significant volume of waste at the end of their useful life and this waste is also feasible to valorize through mechanical and chemical processes, obtaining by-products such as rubber granules, steel, carbon black and energy.

PROBLEM DESCRIPTION

- a) **General aspects:** Currently, Poderosa has an environmental liability associated with unused tires of approximately 60 tons (on average 2,750 units). This problem that today represents an opportunity for Poderosa is mainly due to the deficient application of a management system for unused tires, within which the lack of authorized places for their collection is one of the main factors.

The origin of unused tires is mainly generated by two actors: on one hand, external suppliers who provide transportation services of different kinds (many of them small entrepreneurs) and on the other hand mine operations with their loading and transportation equipment. Even though the sources of environmental liabilities associated with tires are different, the final problem is the same and is related to the generation not only of an environmental liability within Poderosa's facilities but also in landfills (many of them unlicensed) outside the operation, which could bring greater problems in the future.

- b) **Concurrence:** The average life span of a tire is 4 months on asphalted roads up to 1 year. It is relevant to have a record of consumption or implement digital platforms that keep track of used and unused tires in Poderosa's operation. Currently, there are 60 tons of 2500 to 3000 unused tires accumulated in workshops as temporary storage. More details below:

KIND OF VEHICLES	STATUS			TOTAL OF VEHICLES
	OPERATIVE	INOPERATIVE	STAND BY	
DUMP TRUCK	128	1		129
PICK UP	69		1	70
BUS	21	2		23



FRONT LOADER	12		1	13
COMBI	9			9
TANKER TRUCK	8			8
TRUCK	6			6
GRADER	4		1	5
SPRINTER VAN	3			3
CRANE TRUCK	3			3
TRACTOR	2			2
PLATFORM	1			1
ROAD ROLLER			1	1
TOTAL EQUIPOS	266	3	4	273

c) **Who does it affect?** The transport area and mine services area, which are responsible for transportation contracts with external suppliers and loading and transportation from mine operations. Likewise, it affects the patrimonial security area and environmental management.

d) **Problem/opportunity:** There is no systemic approach for the life cycle of tires that encourages their valorization and circularity, which is exacerbated by the lack of centralized collection sites for better control, traceability, and promotion of final disposal of unused tires.

● TARGET AUDIENCE

Superintendency of energy, maintenance and transport.

● IMPACTO ESPERADO

Generate circular economy business models for unused tires generated by Poderosa's processes, involving the community in the

influence area and strategic suppliers.

● EVALUATED SOLUTIONS

Specific gardening work has been carried out using tires.

● SOLUTION REQUIREMENTS

- Generate a direct impact on the circularity index and supplier management.
- Recognize and make visible the costs of proper management of unused tires by suppliers.
- Inventory production of tires by type.
- Keep records of consumption or encourage the incorporation of digital platforms that keep track of used tires in Poderosa's operation.
- Prioritize traceability as a part of diagnosis.
- Develop a comprehensive model for managing tire life cycle.
- Regulatory-normative compliance.
- Compliance with goals with impact indicators (report).
- Preferably a solution with social impact.

● OUTPUT. WHAT DOES THE END USER GET?

Reduce the environmental impact of unused tires for Poderosa.

Desafío

VETA

PODEROSA

