# Sustrend and the Recycling Sector in Chile

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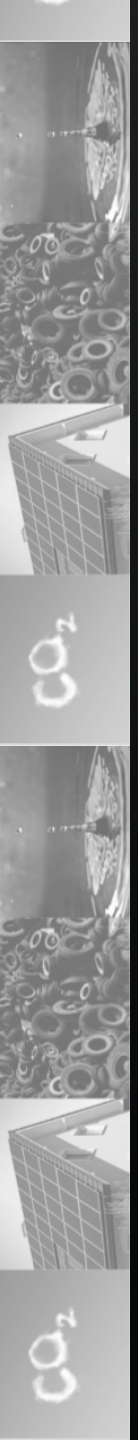

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# Projects developed with ANIR

anir
INDUSTRIA DEL RECICLAJE EN CHILE

- Diagnosis of the recycling industry in Chile.
- The representative sample includes companies belonging to ANIR.
- 23 companies (Plants and Servicies Companies).

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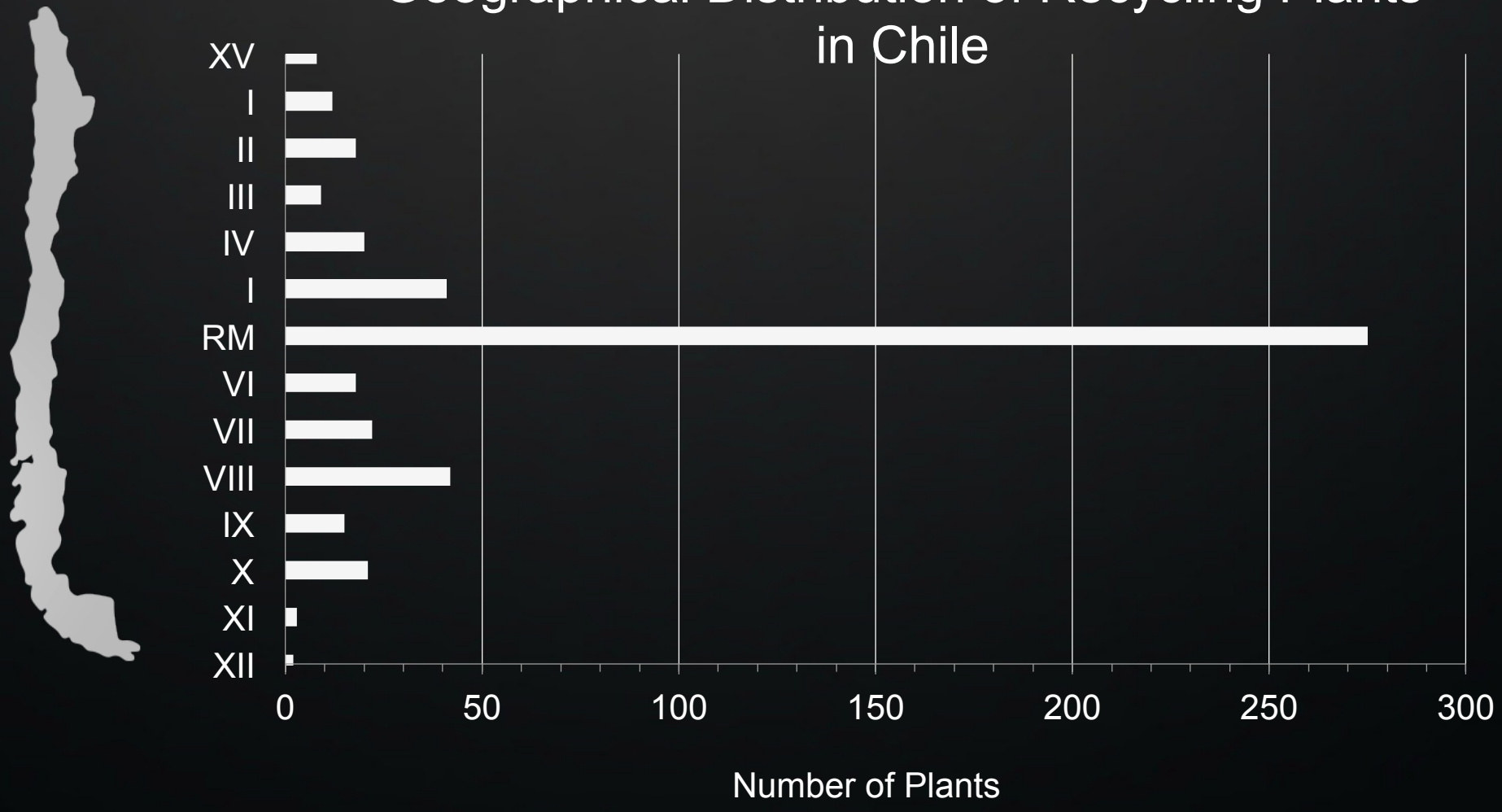
# Recycling Plants in Chile

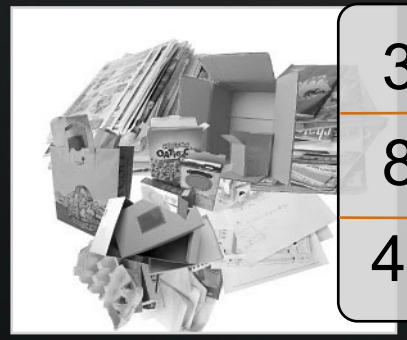



Fuente: SII, 2015

# CURRENT SITUATION

Amount of Recycled Material in Chile (milles Ton):

## PAPER PAPERBOARD



348
830
42%

## STEEL

700
1000
70%

## OILS AND LUBRICANTS

66
107
62 %

## ALUMINUM

6,0
19,3
31%

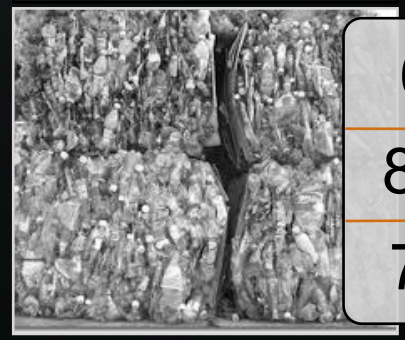
## TYRES

8
132
6%

## GLASS

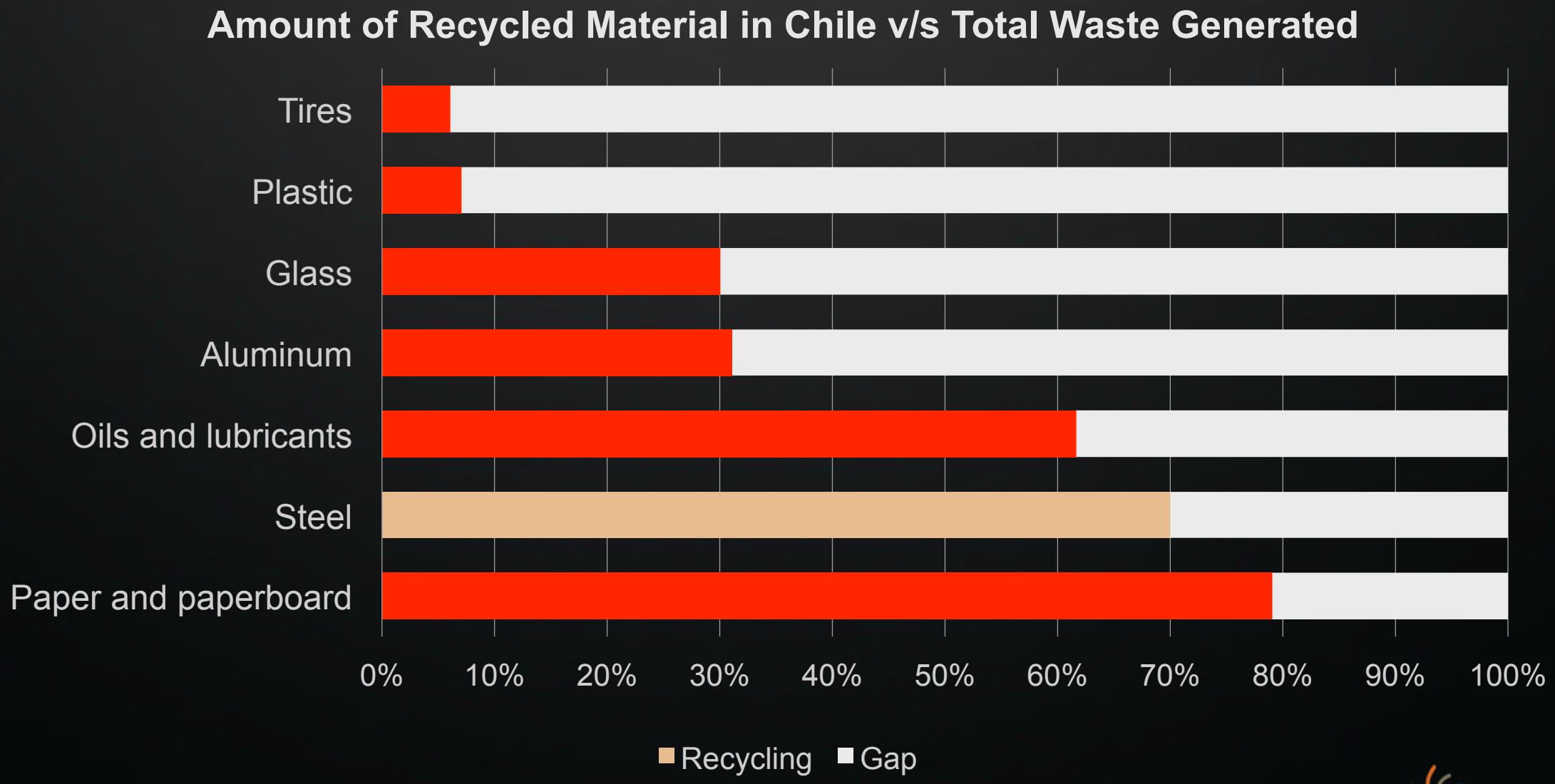

80
266
30%

## PLASTIC



63
890
7%

# CURRENT SITUATION




Fuente: ANIR

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# Tire Recycling in Chile


## Current Alternatives :

1. Pyrolysis
2. Chipped
3. Pelletized

Cratos Pyrolysis Plant- Valparaíso

# Recycling Process in the Case of Tires Used in Mining

ECOTR
IMPROVING THE FUTURE

Proceso

PLANTA DE VALORIZACIÓN DE NFU

CORTE Y REDUCCIÓN DE TAMAÑO

PIRÓLISIS MODIFICADA

NEGRO DE HUMO ECOCB

ACERO

COMBUSTIBLE

GAS AUTOCONSUMO

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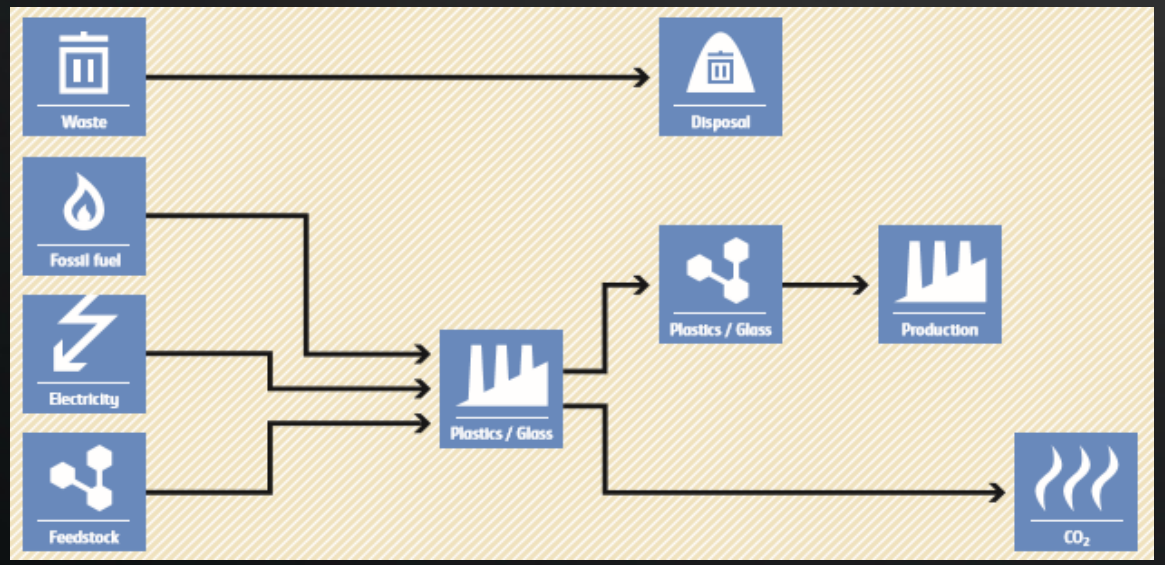
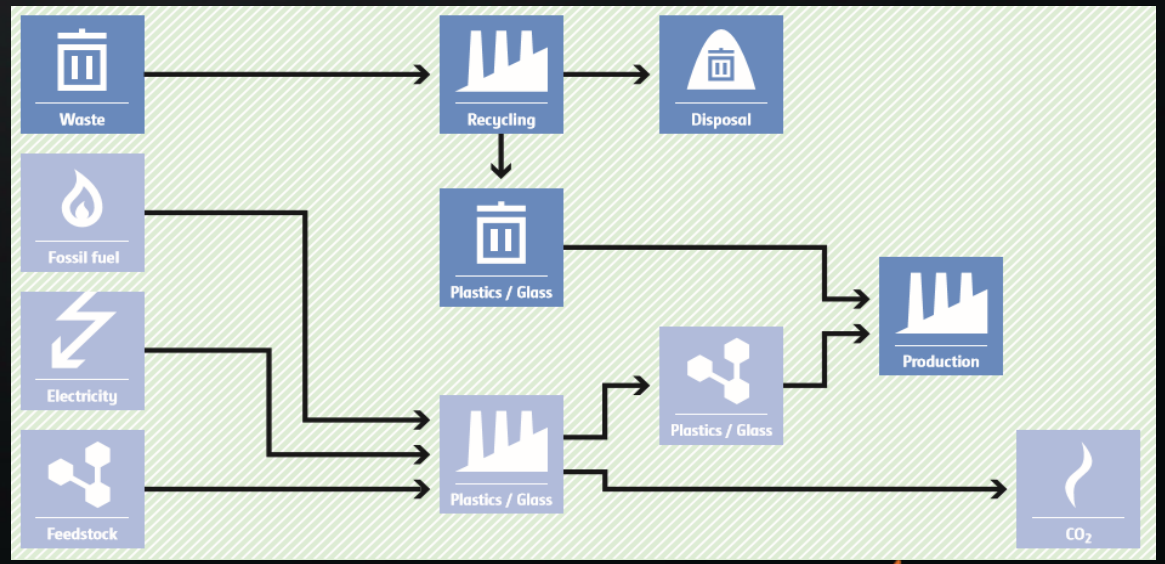
# Proposed Methodology: Based in UNFCCC




## RECYCLING

## ENERGY EFICCIENCY

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# Proposed Methodology

**The Main Objetive is to quantify the reduction of greenhouse gases that occurs when choosing a retreaded tire instead a new one, evaluating the impact in terms of energy saving as well.**

**Baseline Emissions : Manufacturing of New Tyres**

$$BL_p = Electric\ E + Thermal\ E$$

$$BL_p = Q_{fp} \times (1 - L) \times (SEC_e \times EF_{grid} + SEC_{th} \times EF_{ff})$$

**Project Emissions: Retreading Tyres Process**

$$PE_p = Electric\ E + Thermal\ E$$

$$PE_p = (EC_e \times EF_{grid} + FC \times NVC_{ff} \times EF_{ff}) + (Q_{f,p} \times TF^{*}(SEC_e \times EF_{BL,grid} + SEC_{th} \times EF_{BL,ff}))$$

$$ER_p = [BL - PE_p]$$

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# Considerations: Example

Q= Number of tyres: 14.688 [tyres/year] R22,5

L= Adjustment Factor of tyres rejection in the retreading process: 20%

EF= Emission Factor for the mixture of energy consumption:
1,3 [ton $CO_2$/MWh] (Default Factor UNFCCC Methodologies)

$$ER_p = 19.742 \text{ ton } CO_2/\text{year} - 6.563 \text{ ton } CO_2/\text{year}$$

$$= 13.179 \text{ ton } CO_2/\text{year}$$

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# Results of Indicators

- 180 [$kgCO_2/kgTire$]
- 10 [$tCO_2$ /Tire ]


# Thanks for your time!!!

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