



Waste



## PELLENC ST EXCELS IN MEXICO

### EXEMPLARY PROJECT PLANT

- PetStar based in Toluca, Mexico.
- One of the world's largest recyclers of food-contact-grade PET opened in 2006.
- In 2014, the facility produced 50,000 tons of recycled plastic.



### PELLENC ST PROJECT AND TECHNOLOGY

Optical sorting equipment was provided by Pellenc ST and installed in 2010. And thanks to satisfactory return on investment, PetStar has decided to double its sorting line with the latest generation of Pellenc machines. Now, 6 Mistral optical sorters are dedicated to the recycling line.

### TECHNOLOGIE PRINCIPLES

Optical sorters combine Infrared and vision spectrometry.

- Infrared spectrometry: separate all types of polymers and to purify a PET bottles stream removing contaminants.
- Vision spectrometry: recover materials by colour.
- Combination of the two technologies: separate bottles according to colours and materials. (ex: colored PET / clear PET)

These machines are also equipped with a metal sensor. Using induction technology, they remove ferrous and non ferrous metals from a bottle stream.

### CLIMATE BENEFITS

The plant was built so as to treat plastic waste generated by Mexico. But it reduces also the carbone footprint of bottles made with recycled plastic. Indeed, we need 84MJ/kg of virgin PET against 7MJ/kg for recycled PET.

Therefore, recycling contributes to the greenhouse gas reduction:

- On the one hand, recycled materials replace virgin materials.
- On the other hand, recycling avoids using other types of waste treatment which cause more polluting (landfill and incineration).



## SAVED CO<sub>2</sub> EQUIVALENT

### 50,000T/YEAR VIRGIN PET PRODUCTION

#### SYSTEM BOUNDARIES:

- Emissions from the oil extraction to the pellets production

#### DATA USED FOR CALCULATIONS

One ton of Virgin PET production :  
2.15tCO<sub>2</sub>/produced ton  
(source: PlasticsEurope)

**= 107 500 TONS CO<sub>2</sub>**

### 50,000T/YEAR RECYCLED PET PRODUCTION

#### SYSTEM BOUNDARIES:

- Waste collection and transport to the facility.
- Internal transport by freight elevator.
- Industrial sorting and recycling process.
- Facilities, equipments and vehicles amortisation.

#### DATA USED FOR CALCULATIONS

- Actual consumption datas.
- Basic factors of Carbon Base.

**= 25 000 TONS CO<sub>2</sub>**

**SAVED EQUIVALENT = 82 500 TONS CO<sub>2</sub>**

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