



PARTNERS



**MACHINEFABRIEK OTTO
SCHOUTEN (Netherlands)**



COOLREC BV (Netherlands)



**INGENIERÍA NAVARRA
MECÁNICA S.L. (Spain)**



**CENTRO TECNOLÓGICO
LUREDERRA (Spain)**



Bentomet

START DATE: July 2014
DURATION: 36 Months
BUDGET: 948.529 €



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**“DESIGN AND
CONSTRUCTION OF A
BENTONITES RECYCLING LI-
NE FOR THE PRO-
DUCTION OF A HEAVY
METAL ADSOR-
BENT”**



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ECO/13/630345



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project proposes:

- Design and construction of a **bentonites recycling line** to process waste bentonites from wineries.
- Achieve an **efficient adsorbent** of heavy metals present in industrial waste water.
- Design and construction of a **system** to contain the efficient adsorbent, to be implemented into **real industrial plant**, to treat waste water for remove heavy metals.
- **Testing** of the developed solutions in **real industrial scenarios**.



ECO—OBJECTIVES:

Waste treatment:

Modified bentonites are produced in the **recycling bentonites line**, with a production capacity of **50 Kg/day**.



The raw material for the recycling line is the **waste bentonites** used from the clarification process of wines in wineries.

BENTOMET project achieve to **increase the value of a residue** that until now, is treated in distilleries or landfilled.

New waste water treatment system to remove heavy metals:

In BENTOMET project is also designed and constructed a **system where modified bentonites are incorporated**, to be implemented into any industrial line, with the aim of removing heavy metals from its waste water. This system is a **very affordable solution** to treat waste water, since an economic and environmental point of view, compared to current systems used.



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CHARACTERISTICS AND PROPERTIES OF THE MODIFIED BENTONITES:

The main characteristic of modified bentonites is their **magnetic properties** to **remove heavy metal** from waste water:



Magnetic properties with bentonites dissolved in water



Magnetic properties with dried bentonites

Modified bentonites are able to remove heavy metals with an **efficiency** about:
29.6 mg heavy metals absorbed / g modified bentonite
95% heavy metals removed

MARKETABLE RESULTS:

- **Absorbent material** to remove heavy metals from waste water: **modified bentonites**
- **Bentonites recycling line**
- **Waste water treatment system for heavy metals removal**