Why Water2REturn? Resources recovery is a very important topic nowadays, and the demand of nutrients sources continuously grows. The EU slaughtering sector, characterized by its high water and energy consumption, produces large amounts of wastewater (~750,000 m³/year) containing relevant nutrients that are daily discarded.

Ununderstandably, the current approach with regards to the treatment of these wastewaters leads to nutrients' removal instead of nutrients recovery and recycling. Not only the existing nutrients are not upgraded, but the discharged wastewater entails environmental risks as well.

In addition, there is another growing sector experiencing an unceasingly increase: Chemical fertilizers (containing mainly nitrogen, phosphorous and potassium) (consumption rate ~13.6 Mt/year).

However, their extensive use also causes environmental problems.

So, why not we make use of industrial symbiosis, turning wastewater treatment facilities like those installed in slaughterhouses into nutrients' bio-refineries?

What is Water2REturn? Real technological breakthrough based on a Circular Economy approach. It aims at treating slaughterhouses’ wastewaters and recover nutrients with high market value that can be injected back into the economy, as new raw materials, becoming a resource and not a waste anymore. Thus, maximum value from slaughterhouse wastewater extraction, supply security increase and landfilling/emissions avoidance are achieved.

H2020 project proposal has an integrated full scale demonstration process (treatment capacity ~30 m³ wastewater) to scale-up using biochemical and physical technologies and positive balance in energy, footprint to be implemented in a real case study, the slaughterhouse “Matadero del Sur” (Salteras, Spain).

The project outcomes will be:

1. Integrated system for raw materials recovery and treating slaughterhouse wastewater.
2. Production of ready-to-use biofertilizers.
3. Production of microalgae for biofuel production.
4. Techno-economic analysis of the system developed.

The project consortium is composed by:

- General Coordinator: Bioazul S.L. (BIOAZUL), Spain.
- University of Cadiz (UCA), Spain.
- Foundation Centre for the New Water Technologies (CENTA), Spain.
- Agroindustrial Rimacs (RIMACS), Spain.
- Adventech, Advanced Environmental Technologies Ltd (ADVENTECH), Portugal.
- AGER, Algal Technology Centre, d.o.o. (ALGEN), Slovenia.
- University of Ljubljana (UL), Slovenia.
- Slorom Srl (SLOROM), Romania.
- Enco Consulting Srl (ENCO), Italy.
- Zeta Zeta (ZOE), Italy.
- European Livestock and Meat Trading Union (UECBV), Belgium.
- EISTEC GmbH (EISTEC), Germany.
- Exergy Ltd (EXERGY), United Kingdom.
- European Landowners Organization (ELO), Belgium.

Who makes Water2REturn possible?

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