



Project Information Sheet

Industrial validation of an ozone based CIP system for dairy industries (ECO3CIP)

Programme area:	Food and drink sector: Cleaner and innovative products, processes and services aiming at a reduction of waste and greenhouse gas emissions, or/and increasing recycling and recovery / Improved efficiency in the water consumption of a process or improved eco-efficiency of water management.
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Partners:	ITT Water & wastewater España, SA; Instalaciones Industriales Grau, SRL; Esnelat, SL (Spain)
Website:	www.eco3cip.eu
Benefits :	Validation of a new best available technology for cleaning and disinfection of closed equipment in dairy companies
Keywords:	ozone clean in place, sanitation, CIP
Sector:	15.511 Milk preparation, butter and other dairy products
Type of solution	process.
Duration:	01/06/2010 – 01/06/2013
Budget:	€ 877 363,00 (EU contribution: 50%)
Contract number:	ECO/09/256045/SI2.564671

Summary

Hygienic standards are a main concern in dairies. Some of the most important cleaning tasks are those related to the washing of closed equipment where Cleaning In Place (CIP) systems are of common use. CIP are characterized by automatic cleaning programs based on a succession of several solutions of water, cleaning chemicals and disinfection agents that are discharged together with large amounts of water to rinse out residual chemicals. So health and environmental concerns are supporting the need for alternative sanitation technologies. This project deals with the first industrial application of an ozone based CIP system and its validation in technical and economic terms at industrial level to boost its wide implementation in dairy industry. The partnership is composed of ainia as coordinator of the project, a dairy industry (ESNELAT), an expert on ozone engineering (ITT water&wastewater) and an expert on CIP systems (Instalaciones Grau). The technical tasks scheduled include an on site environmental and hygienic diagnosis, design and retrofitting of the existing CIP system into ozone based CIP and monitoring and validation of the ozone based cip system at industrial scale.

Expected and/or achieved results

- Expected reductions in wastewater volume (25%), chemical consumption (10%) and organic load in wastewater (15%) compared to current practice should demonstrate at industrial level the environmental and economic benefits of the system
- Validation of the ozone based CIP as a Best Available Technique through this reference study case
- Guidelines for process implementation
- Broad dissemination within dairy industries and other stakeholders
- Set the basis for commercialisation of the system

The information sheet will be published in the [Eco-Innovation website](#). The EACI reserves the right to edit the information sheet for content and length