WATENERWINE

INNOVATION CATALOGUE

Water, Energy and Renewable Energy Solutions for Wineries

Co-funded by the European Union

INTRODUCTION

This **Innovation Catalogue** has been developed within the **WatEnerWine** project as a practical knowledge-transfer tool to support the **green transition of the European wine sector**. It showcases technological solutions that can foster the uptake, adoption and deployment of technologies to improve wineries' water and energy efficiency, renewable energy use, sustainability and competitiveness.

The catalogue connects **wineries** with **Technology** and **innovation providers** offering solutions in three key areas:

WATER MANAGEMENT & EFFICIENCY

ENERGY EFFICIENCY

RENEWABLE ENERGY SOURCES

Each profile includes the provider, proposed solution, potential applications in wineries, success stories or references, indicative costs where available, and contact details, helping SMEs identify suitable and ready-to-implement solutions.

A more extensive online version will also be available on the WICA webpage, allowing the catalogue to be continuously expanded and updated. The **Call for Technology Providers** will remain open until the end of the project. Access the Call here.

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ABOUT WatEnerWine project

Water and Energy in the wine sector: transition towards a sustainable, efficient and resilient industry

The project aims to support the wine sector in its transition towards a more **sustainable, efficient and resilient industry**, by improving the use of **water and energy efficiency** and fostering the uptake of **renewable energy sources**.

WatEnerWine brings together clusters, technology centres and business support organisations from **Spain, France and Italy**, working closely with **wineries, technology providers and SMEs** to accelerate the green transition of the European wine value chain.

The project is funded by the European Union under the Single Market Programme (SMP-COSME-2023-AGRICLUSTER).

Consortium:

innovi Clúster Vitivinícola Català

innovin COGNAC+ BORDEAUX NOUVELLE AQUITAINE

CLUST-ER AGRIFOOD AGROALIMENTARE

VINIDEA

eurecat Centro Tecnológico

IFV

CWP CATALAN WATER PARTNERSHIP

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1. ALTERNATIVE WATER SUPPLY (GROUNDWATER AND RAINWATER)

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NATURALEA

SPAIN

WATER MANAGEMENT & EFFICIENCY

1. Alternative water supply (groundwater and rainwater)

Environmental company

Company specialised in the design and implementation of systems for the restoration and conservation of natural environments and the naturalisation of urban spaces using Nature-Based Solutions (NBS). Naturalea develops projects related to water treatment, reuse and sustainable environmental management.

Nature-Based Stormwater Capture and Treatment Systems

Nature-based solution for stormwater capture, treatment and management through sponge basins, constructed wetlands, gravel filters and native helophytic vegetation. These systems improve water quality, attenuate runoff and enable storage, infiltration, aquifer recharge or non-potable reuse, while delivering ecosystem benefits such as biodiversity enhancement, landscape integration and greater resilience to extreme rainfall events.

CAPEX: -
OPEX: Approx. 6 maintenance interventions/year (one operator/day).
Other: Scalable for wineries of different sizes. Low energy consumption and low operational requirements

Success story (wine sector)

Implementation of naturalised ponds for Bodegas Torres converting agricultural drainage channels into ponds that improved peak flow attenuation, reduced erosion and enhanced biodiversity.

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2. OPTIMISATION OF WATER PROCESS EFFICIENCY AND INTERNAL RECIRCULATION

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KEIKEN

SPAIN

WATER MANAGEMENT & EFFICIENCY

2. Optimisation of water process efficiency and internal recirculation

Engineering company
Founded in 2015, Keiken, was created with the aim of developing and providing technologically advanced solutions for: desalination, energy efficiency, filtration and water reuse through compact and modular systems.

Compact membrane plants (mostly reverse osmosis) to ensure that raw or recirculated water attains the highest possible purity.
Membrane-based treatment systems that ensure high-quality water for winery processes such as cleaning, sanitation or dilution. They enable the safe use of recycled or rainwater while maintaining stable water quality and reducing the hydrological footprint of wine production.

CAPEX: €50,000 – >€100,000 (depending on plant capacity)
OPEX: Approx. €15,000–€30,000/year depending on plant size and location.
Other: Water reuse up to 70–75% with membrane systems.

Success story (beverages & other industries)
Membrane filtration systems implemented in the food and beverage sector, including ultrafiltration plants for citrus juice clarification (200 m^3/h) and coffee extract concentration (2.3 m^3/h).



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INSTITUTO DE CONSUMO ENERGÉTICO (ICE)

SPAIN

WATER MANAGEMENT & EFFICIENCY

2. Optimisation of water process efficiency and internal recirculation

Distribution company

Company specialised in ozone and water treatment solutions aimed at reducing water consumption, energy use and chemical pollution in industrial processes.

Ozonated water for cleaning and disinfecting boots

Ozone-based cleaning and disinfection system that replaces chemicals such as detergents and chlorine. It reduces biofilm formation and microorganisms in pipes and surfaces while lowering water consumption by eliminating multiple rinsing cycles. The system also reduces chemical discharge to wastewater and improves operational efficiency in wineries.

CAPEX: €10,000 – €50,000
OPEX: Low; approx. 1 maintenance intervention per year.
Other: Suitable for wineries of different sizes: optimal <20 m³/day. For higher flow rates □ MBBR process.

Success story (wine, agriculture, industry)

Installation of an ozonated water cleaning and disinfection system in a winery in Catalonia, reducing water consumption in cleaning processes and improving sanitation efficiency while decreasing chemical use.





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Wise Water Solutions

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WATER MANAGEMENT & EFFICIENCY

2. Optimisation of water process efficiency and internal recirculation

Distribution company

Wise Water Solution develops intelligent circular water solutions for the agri-food sector, focused on advanced water recovery and Zero Liquid Discharge (ZLD) systems. The convection enhanced evaporator is the core solution for low-temperature, ambient pressure, safe and robust wastewater treatment system inspired by nature.

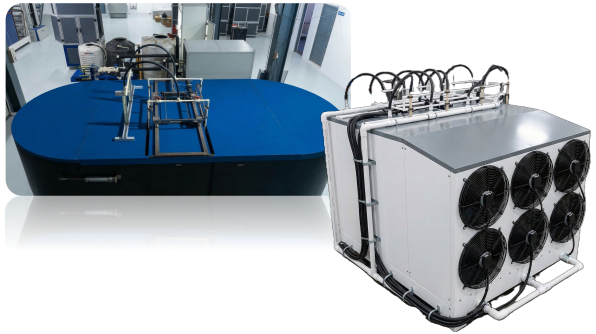
Hybrid ZLD Water Recycling System

Integrated circular water recycling system combining Batch Reverse Osmosis (only if pre-concentration is needed) and AI-Enhanced Convection Evaporators to achieve near-Zero Liquid Discharge. The solution recovers more than 95% of winery wastewater as reusable water for cleaning, irrigation or cooling. By using low-grade waste heat or solar thermal energy and automated control, it significantly reduces freshwater consumption, operational costs and environmental impact. Final waste remains as a minimal liquid concentrated fraction or dry solids for safe disposal.

Success story

Technology validated in industrial sectors such as mining, landfill, oil & gas and metal treatment plants, demonstrating high water recovery and operational efficiency.

CAPEX: €50,000 – €100,000 (medium-scale system)
OPEX: Low due to automated operation and use of waste heat. < 5€/m^3
Other: AI-based monitoring and predictive maintenance, Modular system scalable for different capacities.
Corrosion proof by design (GFRP, Ti).



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CAPERVA FILTRATION

SPAIN

WATER MANAGEMENT & EFFICIENCY

2. Optimisation of water process efficiency and internal recirculation

Technology company

Founded in 2006, specialised in technological solutions for the chemical, food & environmental industries. Its process technology development division focuses on water treatment, reuse and energy efficiency solutions for industry, with a strong expertise in membrane filtration systems.

Cross-flow filtration or tangential filtration

Membrane-based filtration technology that clarifies and stabilises liquids using tangential flow across semi-permeable membranes, avoiding clogging and enabling continuous operation without traditional filter aids. The system improves product quality, reduces water and energy consumption, enables recovery of valuable components and reduces waste generation.

Caperva brings “Made in Spain” filtration technology, offering a competitive and reliable alternative in a market traditionally dominated by Italian manufacturers.

Success story

Applications in the agri-food and wine sector including concentration and reduction of sugars in must, recovery of *enocyanin* pigments from grape pomace, and purification of wine derivatives for dye production using tangential filtration and membrane separation processes.

CAPEX: €50,000 – €100,000 (depending on plant size)

OPEX: Maintenance 2–4 interventions/year in small wineries and 4–6 in large wineries; membrane replacement every 2–4 years.

Other: Estimated water savings: 15–35% (300–8000 m³/year depending on production). Estimated energy savings: 8–20%

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LUMINOR ENVIRONMENTAL

SPAIN

WATER MANAGEMENT & EFFICIENCY

2. Optimisation of water process efficiency and internal recirculation

Technology company

Spanish office of Luminor Environmental Inc., a Canadian manufacturer of ultraviolet (UV) water treatment systems with more than 250,000 installations worldwide.

Ultraviolet (UV) systems: Blackcomb/Racks, Rainier & Everest series

UV-C water treatment systems disinfect water by exposing it to ultraviolet light (~254 nm), inactivating bacteria, viruses and microorganisms without chemicals or by-products. In wineries, UV systems are used for process water disinfection, bottle and equipment washing, laboratory water supply and protection of filtration or membrane systems.

CAPEX: €10,000 – €20,000
OPEX: Low; UV lamp replacement every 1–1.5 years (€50–€250).
Other: Chemical-free disinfection. Low energy consumption

Success story

UV system installed at Whistling Eagle Vineyard (Australia) to ensure microbiologically safe water for drinking, cleaning and winery processes. Additional installations exist in beverage plants such as breweries in Canada and Guatemala.





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W PLATFORM

FRANCE

WATER MANAGEMENT & EFFICIENCY

2. Optimisation of water process efficiency and internal recirculation

Private environmental technology company – CO_2 capture, analysis and circular valorisation for wineries

Founded in 2021, W Platform specialises in capturing and valorising fermentative CO_2 and gaseous effluents in a circular economy approach. Its CO2Winery solution helps wineries reduce their carbon footprint, improve water efficiency and enhance oenological processes through on-site CO_2 reuse.

CO2 WATER

CO2 Water reduces winery water consumption by 15–50% during cleaning operations. It injects recovered fermentative CO_2 into process water, lowering pH to 5–6 and improving wetting properties. This neutralises caustic residues, reducing rinsing time, water volumes, chemical use and energy demand. Easy to integrate into existing cellar infrastructure, it supports circular resource use by reusing on-site CO_2 in line with sustainable production goals.

CAPEX: 10.000 – 20.000 €
OPEX: Annual seal check for leaks; easy recalibration if needed.
Other: Suitable for all winery sizes. Low complexity.

Success story:

Château Latour (France): CO2 Water reduced tank cleaning rinsing time and water use threefold, saving over 500 m^3/year while lowering chemical and energy consumption. Combined with CO2Winery, the estate captures up to 16 tonnes of fermentative CO_2/year, reused on-site for inerting, transfers, CO_2 snow and carbonic ice production.

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ECOPAK

BELGIUM

WATER MANAGEMENT & EFFICIENCY

2. Optimisation of water process efficiency and internal recirculation

Private company – circular water treatment and reuse solutions for industry

Ekopak is a listed company with 280 staff and offices in 10 countries, specialising in circular water solutions for industry. Over 20 years, it has delivered hundreds of installations worldwide, offering a Water-as-a-Service model in which Ekopak owns, finances and maintains the system.

Tailored Water & Wastewater Treatment System

Ekopak designs and builds fully custom water and wastewater treatment systems, selected after on-site pilot testing. Solutions cover inlet water treatment, CIP optimisation, internal recirculation, cooling, disinfection and wastewater reuse, using membranes (UF, RO, NF), UV, anaerobic systems and online monitoring. No proprietary technology — the best-fit solution is selected per project, minimising chemical footprint and maximising water reuse efficiency.

Success story:

A large Belgian agri-food company reusing rainwater faced high organic matter and microbiology levels. After piloting NX Filtration hollow fibre nanofiltration membranes, Ekopak achieved up to 95% water recovery, reduced cleaning frequency to every two days, and cut chemical consumption significantly. The pilot led directly to a full-scale permanent installation.

CAPEX: 100 000€
OPEX: 2–3 visits/year. Water-as-a-Service option available (pay by m3)
Other: Best suited for medium & large wineries (high complexity).



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ALIMPEX

FRANCE

WATER MANAGEMENT & EFFICIENCY

2. Optimisation of water process efficiency and internal recirculation

Private company – hygiene solutions and microbiological risk management for the wine industry

ALIMPEX specialises in hygiene solutions and microbiological risk management, with deep roots in the wine industry. Using innovative decision-making tools, it tailors hygiene practices to actual risk levels, helping wineries secure their processes while optimising water, energy and cleaning product consumption.

Olimpe Technology

Olimpe uses online water electrolysis to produce hypochlorous acid on demand — an effective biocide requiring no chemical storage or rinsing. Connected directly to the water supply, it secures microbiological quality, limits biofilm formation and simplifies cleaning protocols. It reduces water use by 30%, energy by 8%, and chemical inputs significantly. Easy to integrate, with minimal waste and improved operator safety.

CAPEX: 10.000 - 20.000€
OPEX: 1 maintenance/year.
Electrolysis system: €350 every 2 years
Other: Suitable for all sizes. Flexible in volumes and yield.

Success story:

A mid-sized winery deploying Olimpe reduced cleaning time for presses, tanks and fermentation vats while cutting water consumption by ~30% and peracetic acid use by ~40%. This led to cost savings, a safer working environment and a smaller environmental footprint, while streamlining operations and improving overall resource management.

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3. OPTIMISATION OF WASTEWATER MANAGEMENT, TREATMENT AND REUSE

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AQUACYCLE

SPAIN

Water treatment engineering company
Specialised in advanced industrial water treatment and Zero Liquid Discharge (ZLD) solutions.

Circular Water Optimisation, ZLD & Smart Water Management Methodologies

Integrated methodologies for water optimisation, wastewater recovery and digital monitoring to improve water efficiency in industrial processes. Solutions enable internal water recirculation, maximise reuse and support zero liquid discharge through advanced treatment technologies and real-time system optimisation.

Success story

Implementation of ultrafiltration (UF) membrane treatment in a slaughterhouse wastewater treatment plant, producing high-quality effluent suitable for internal reuse in cleaning and cooling processes while reducing freshwater consumption.

CAPEX: €20,000 – >€100,000 depending on system configuration
OPEX: -
Other: Potential water savings up to 100% through recirculation and ZLD strategies



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GEOAMBIENT

SPAIN

WATER MANAGEMENT & EFFICIENCY

3. Optimisation of wastewater management, treatment and reuse

Environmental engineering and implementation company

Founded in 2003 and part of the French SERFIM Group, specialised in wastewater treatment and land remediation. It designs and builds constructed wetlands for natural wastewater treatment and water reuse.

Constructed wetlands with and without zeolites

Constructed wetlands treat winery wastewater with high organic load using natural biological processes. The systems use zeolites and native helophytic plants to enhance purification, improve biodiversity and retain nutrients for vineyard irrigation (100% water reuse). They require simple, low-cost maintenance and operate with very low or zero energy consumption, often supported by solar power.

CAPEX: €50,000 – €100,000+ depending on installation size
OPEX: Approx. €4,000/year maintenance. Simple.
Other: Suitable for wineries of different sizes: optimal <20 m³/day. For higher flow rates MBBR process.

Success story (wine & spirits)

Successful implementation of constructed wetlands in several wineries in France, including Saint Laurent du Médoc (150 m³/day), Domaine de Marcel Lapierre and Domaine de Panéry, as well as more than 150 installations for urban wastewater treatment.



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NATURALEA

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WATER MANAGEMENT & EFFICIENCY

3. Optimisation of wastewater management, treatment and reuse

Environmental company

Company specialised in the design and implementation of systems for the restoration and conservation of natural environments and the naturalisation of urban spaces using Nature-Based Solutions (NBS). Naturalea develops projects related to water treatment, reuse and sustainable environmental management.

Wetlands, channels and natural filters based on Nature-based Solutions for wastewater treatment

For wastewater treatment, wetlands and filtering channels replicate natural ecosystem processes, enabling the reduction of pollutant loads through physical, chemical and biological mechanisms. These systems operate without external energy inputs and require low operation and maintenance.

CAPEX: -
OPEX: Approx. 6 maintenance interventions/year (one operator/day).
Other: Scalable for wineries of different sizes. Low energy consumption and low operational requirements

Success story

Can Cabanyes wetland (Catalonia), designed by UPC and built by Naturalea in 2003, is an example of a natural tertiary treatment system improving water quality and biodiversity. Later studies reported ARG reductions of 79% in winter and 88% in summer.

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DERYPOL S.A

SPAIN

WATER MANAGEMENT & EFFICIENCY

3. Optimisation of wastewater management, treatment and reuse

Chemical company

Specialised in the development and production of polymers for wastewater treatment and industrial processes, with strong R&D capabilities and extensive experience in the agrifood sector.

HIMOLOC Flocculants (Liquid Brine Dispersion)

Innovative liquid flocculants for wastewater treatment plants, applied in physico-chemical processes (DAF, settling) and sludge dewatering. They can be dissolved using recycled or seawater and allow higher concentration, reducing freshwater consumption and operational costs. Non-acrylamide alternatives reduce hazardous substances and improve sludge reuse possibilities in agriculture.

Success story (Wine, Slaughterhouse, Dairy, Fruit Juice)

Implementation in a slaughterhouse wastewater treatment plant (Aragon, Spain, 180 m³/h). Using HIMOLOC reduced daily flocculant costs and saved 8,600 L/day of freshwater consumption compared to conventional flocculants.

CAPEX: <€5,000 / 10,000€ - 20,000€

OPEX: Reduced operational costs through lower flocculant consumption and water savings.

Other: Annual visit to check that flocculant is working well or if wastewater have changed and different flocculant could work better.

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KEIKEN

SPAIN

WATER MANAGEMENT & EFFICIENCY

3. Optimisation of wastewater management, treatment and reuse

Engineering company

Founded in 2015, Keiken, was created with the aim of developing and providing technologically advanced solutions for: desalination, energy efficiency, filtration and water reuse through compact and modular systems.

Compact and containerized water treatment plants

Compact and modular water treatment plants designed to further purify treated wastewater and enable its reuse in wineries. The systems are plug-and-play, scalable and can integrate photovoltaic panels, allowing water reuse for irrigation or cleaning while reducing freshwater consumption and environmental impact.

CAPEX: €50,000 – >€100,000 (depending on plant capacity)
OPEX: Approx. €15,000–€30,000/year depending on plant size and location.
Other: Plug & play containerized plants (20–40 ft). Scalable from 20 to 2,000 m³/day

Success story (beverages & other industries)

Implementation of containerized desalination and water treatment plants in several international projects, including a 500 m³/day wastewater treatment plant for water reuse and irrigation in a hotel resort and large desalination systems up to 2,500 m³/day.

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CIMICO

SPAIN

WATER MANAGEMENT & EFFICIENCY

3. Optimisation of wastewater management, treatment and reuse

Environmental technology company

Founded in 2021, Cimico specializes in advanced biological solutions for secondary wastewater treatment. The company develops innovative systems and digital tools to enhance treatment efficiency and optimize operational performance.

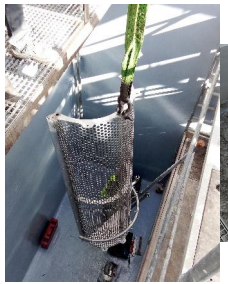
CIMICO MOBED® MBBR – High-Efficiency Biofilm Treatment for Winery Wastewater

Biological wastewater treatment technology based on MBBR reactors using the patented MOBED® carrier, which enables high biomass concentration and efficient removal of COD, BOD, nitrogen and phosphorus. The system offers compact design, operational robustness and low maintenance, and can adapt in real time to seasonal fluctuations typical of winery wastewater loads.

CAPEX: proportional to the flow and pollutant load
OPEX: Low – mainly related to aeration energy consumption.
Other: Around 15% reduction in energy consumption through digital process optimization. From 10 m³ to >500 m³

Success story (Beverages, Dairy, Meat, and Food Flavors)

Upgrade of a wastewater treatment plant in an agri-food company (Dallant) treating flows of around 25 m³/day with high organic loads. The installation of a 96 m³ MBBR reactor with MOBED® carriers significantly improved COD removal efficiency and ensured stable effluent quality under variable load conditions.





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SIGMA WATER GROUP

SPAIN

WATER MANAGEMENT & EFFICIENCY

3. Optimisation of wastewater management, treatment and reuse

Engineering company

With more than 40 years of experience designing and implementing industrial wastewater treatment solutions, including biological processes, filtration and disinfection systems.

Wastewater reception ponds & Biological Membrane Reactor (MBR) with tertiary treatment

Wastewater treatment process combining physico-chemical flotation (SIGMADAF), biological treatment with membrane bioreactors (SIGMAMBR), and optional disinfection and sludge dewatering. It removes solids, oils and organic matter (COD/BOD), producing high-quality effluent suitable for discharge or reuse. Anaerobic treatment can also be applied for high-strength wastewater, enabling biogas production and energy recovery.

Success story (Winery, Spirits, Liquors)

Implementation of wastewater treatment plants for wineries including Bodegas Murviedro (Spain) with treatment capacity of 140 m³/day during harvest and Concha y Toro wineries (Chile) where MBR systems were installed to upgrade existing biological treatment and enable water reuse.

CAPEX: > €100,000 (depending on wastewater flows, loads and treatment requirements)
OPEX: Approx. 3–5 €/m³ depending on treatment process and reuse requirements.
Other: RO filtration can be done with high recovery rate (80 – 90%) to minimize the reject high saline water volume

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LEITAT

SPAIN

WATER MANAGEMENT & EFFICIENCY

3. Optimisation of wastewater management, treatment and reuse

Non-profit technology centre

Developing innovative solutions for sustainable industry, with strong expertise in water treatment and reuse, resource recovery, process optimisation and circular water management.

Combination of nature-based solutions and advanced oxidation processes for the removal of emerging contaminants

Hybrid water treatment combining enhanced constructed wetlands and solar-driven advanced oxidation and/or oxidation to remove conventional and emerging contaminants and enable safe water use and reuse for agriculture.

Success story (under validation)

Technology currently validated in the UNIVERSWATER project, combining constructed wetlands and solar-driven advanced oxidation to treat WWTP, agricultural effluents and contaminated lakes for safe irrigation water (olive, vine, vegetables and beans), with pilot demonstrations planned in three European sites (TRL4→TRL5).

CAPEX: €50,000–€100,000
OPEX: Approx. €5,000–€15,000/year; 2–4 wetland maintenance interventions/year and monthly checks of oxidation units
Other: Moderate energy demand (mainly pumps, led-lamps and ozone generation)





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BIOFILTRO

BELGIUM

Private environmental technology company – nature-based wastewater treatment

European subsidiary of BioFiltro Group (California), BioFiltro BE specialises in vermifiltration — a low-energy biological process using worms and microbial communities to purify wastewater. It designs, installs and maintains high-performance systems for wineries and agri-food industries.

BioFiltro Biodynamic Aerobic (BIDA®) System

The BIDA® system uses earthworms in woodchip beds to treat wine effluents, removing up to 99% of contaminants through a living biofilter. Treated water is reused for irrigation (95–100% reuse rate). Co-product: vermicompost improving soil health and carbon sequestration. Energy reduction: 80–95%. No sludge, no odours. IoT-based automated monitoring. Low maintenance, seasonality-proof.

CAPEX: > 100.000€
OPEX: Light maintenance: pumps, vermicompost & woodchip replacement (2y).
Other:
Suitable for medium/large wineries (>30 ha, min. 5 m³/day).

Success story:

Château Palmer (Margaux, France): BioFiltro's system treats up to 15 m³/day of wine effluents, achieving over 90% organic load reduction. Treated water replaces potable water for irrigation and cleaning. 85 tonnes of vermicompost produced every 2 years. The installation is featured in the estate's oenotourism programme.



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SAVEA

FRANCE

WATER MANAGEMENT & EFFICIENCY

3. Optimisation of wastewater management, treatment and reuse

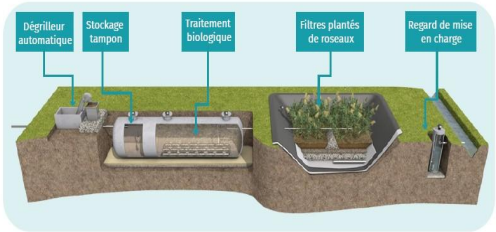
Private company – wastewater treatment solutions for wineries and agri-food industries

Founded in 1998 (formerly Agro Environnement), SAVEA specialises in effluent treatment and water purification for wineries and industries. With over 500 winery references, it is the French market leader, offering solutions tailored to both wine-making and crop protection effluents, the two mandatory treatment streams for wine producers.

Cascade Twin® and Vitimax®

Cascade Twin® and Vitimax® are the only two systems approved in France for treating both wine-making and crop protection effluents. Both use aerobic biological treatment, where free-culture bacteria degrade polluting loads via aeration in vats or basins. SAVEA combines intensive aerobic processes with constructed wetlands for full treatment cycle control, including integrated sludge management. Water savings: ~600,000 m³/year. Water reuse: 10% (Spain).

CAPEX: 20.000€ - 50.000€
OPEX: Low cost: vegetation management + biomass harvest every 8–10 years
Other: Suitable for all sizes. Land availability is a design parameter.



Success story:

A vineyard-hospitality estate (5-star hotel, restaurants, spa) had its treatment system first built by SAVEA in 1999, then extended in 2016 with the patented Rhizosph'air system. Treating 60 m³/day of domestic and 30 m³/day of wine effluents during harvest, the aerated pre-treatment + constructed wetlands system achieves COD 125 mg/L and BOD5 35 mg/L at discharge.

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SOUSLIKOFF

FRANCE

WATER MANAGEMENT & EFFICIENCY

3. Optimisation of wastewater management, treatment and reuse

Private company – mechanical solutions manufacturer for soil and vine work

Founded in 1969 in the heart of the Médoc, SOUSLIKOFF designs and manufactures mechanical solutions for viticulture, distributed across French wine regions and internationally. Its VIGNALEX system transforms vine shoots into compost while eliminating effluents, enabling wineries to manage wastewater autonomously and sustainably.

Vignalex

VIGNALEX combines composting and effluent elimination in a single system. Crushed shoots, stems, marc or green waste are placed on a ventilated concrete slab above a tank of collected effluents. A turning bucket system rotates the compost heap while irrigating it with the dirty water, which evaporates through the heat generated. After a few months, healthy compost is produced and effluents are fully eliminated — no discharge, no chemicals, autonomous operation.

CAPEX: 100 000€
OPEX: 1 maintenance visit per year.
Other: Suitable for all winery sizes. Tailor-made solution.

Success story:

Three VIGNALEX units operating in France (Bordeaux, Médoc and Corsica) for several years, delivering full satisfaction to their users — both economically and ecologically — and featured proudly during estate visits.



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RESILIENCE H2O

FRANCE

WATER MANAGEMENT & EFFICIENCY

3. Optimisation of wastewater management, treatment and reuse

Independent water & wastewater engineering consultancy – nature-based solutions specialist

Résilience H2O is an independent engineering consultancy (est. 2023) specialising in sustainable water and wastewater management for wineries and agri-food facilities. Technology-neutral and objective, it designs nature-based treatment systems — constructed wetlands, vegetated filtration — optimised for low energy, low cost and regulatory compliance.

Résilience H2O

Constructed wetlands, vegetated infiltration areas and organic filtration media (reed beds, wood chips) treat winery effluents with very low energy demand and minimal maintenance. Buffer storage handles seasonal harvest peaks without performance loss. Sludge is managed in situ through biomass harvesting. The solution can be standalone or integrated into hybrid chains, ensuring scalability, regulatory adaptability and significantly lower environmental impact than conventional systems.

CAPEX: 20 000€ - 50 000€
OPEX: Low cost: vegetation management + biomass harvest every 8–10 years
Other: Suitable for all sizes. Land availability is a design parameter.

Success story:

An agroforestry vineyard in the Basque Country: Résilience H2O designed an integrated effluent management system using constructed wetlands and vegetated infiltration, adapted to viticulture's seasonal peaks. Treated water is returned to soil through controlled zones, avoiding energy-intensive technologies, reducing sludge evacuation and supporting long-term soil regeneration aligned with agroecological principles.

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PPU Umwelttechnik GmbH

GERMANY

WATER MANAGEMENT & EFFICIENCY

3. Optimisation of wastewater management, treatment and reuse

Technology company

Technology provider specialised in modular and containerised wastewater treatment systems for municipal and industrial applications under the ClearFox® brand, with installations in more than 50 countries.

ClearFox® Fixed Bed Bio Reactors (FBBR)

High-rate biological wastewater treatment technology based on submerged fixed-bed reactors where microorganisms grow on carrier materials to degrade organic pollutants and nitrogen compounds. The modular containerised design ensures compact installation, low operating costs and reliable performance under seasonal wastewater loads typical of wineries

Success story (Beverages, Dairy, Meat, and Food Flavors)

Implementation of a containerised wastewater treatment plant at Fürstlich Castell Winery (Germany) to replace an ageing SBR system. The new ClearFox® FBBR system treats highly variable flows (10–45 m³/day) and high organic loads during harvest season, ensuring compliance with discharge limits and stable operation.

CAPEX: 20,000€ to > €100,000 (depending on wastewater flows, loads and treatment requirements)
OPEX: Low operating costs; mainly related to biological treatment and routine system checks.
Other: >90% water reuse when combined with tertiary treatment





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4. MONITORING, DIGITALISATION AND CONTROL

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WATENERWINE

DEFCON8

SPAIN

WATER MANAGEMENT & EFFICIENCY

4. Monitoring, digitalisation and automation

Distribution company

Environmental SME funded in 2017 developing smart monitoring technologies to measure water consumption and promote water savings through real-time data and user awareness.

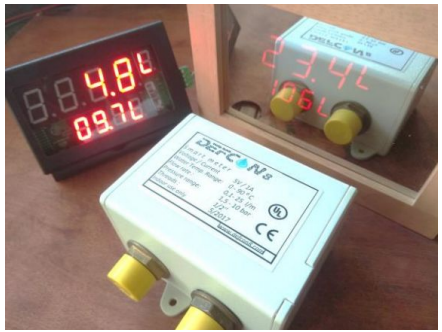
Smart Water Flow Monitor

Smart hardware and IoT platform that monitors water consumption in real time through submetering at key points of any facility. The system provides instant feedback and includes a “reverse counter mode”, allowing users to set a daily consumption target and track the remaining available water. This feature increases awareness, encourages behavioral changes and helps optimise water use. Additionally, all flow data can be sent to the cloud for statistical treatment.

CAPEX: 450€/ud
OPEX:. Very low – no regular maintenance required.
Other: Real-time monitoring and predictive consumption analysis. Scalable solution suitable for facilities of any size

Success story

Pilot implementations in schools, hotels, hospitals and offices have achieved 5–22% water savings, with additional reductions in energy consumption linked to hot water use.



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SENSSAL SOLUTIONS

SPAIN

WATER MANAGEMENT & EFFICIENCY

4. Monitoring, digitalisation and automation

Technology company

Technology company specialised in smart water monitoring solutions that use sensors and cloud platforms to analyse water consumption, detect leaks and improve water efficiency.

Senssal System – Smart Water Monitoring & Digital Management Platform

Digital water management system combining IoT flow meters, wireless communication and a cloud analytics platform to monitor water consumption in real time. The system enables sectorisation of processes, early leak detection and automated alerts, helping wineries optimise water use and improve operational efficiency.

Success story

Implementation at Recaredo winery (Catalonia) where IoT flow meters were installed at key production points. The system enabled real-time monitoring, leak detection and process optimisation, improving water efficiency and providing data to support sustainability strategies.

CAPEX: €10,000 – €20,000 (depending on number of monitoring points)
OPEX: Approx. €250–€500/year platform and data service fee.
Other: Water savings potential: 10–30%, Early leak detection within minutes, Non-invasive installation with battery-powered IoT meters

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WATENERWINE

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AonChip

SPAIN

WATER MANAGEMENT & EFFICIENCY

4. Monitoring, digitalisation and automation

Digital technology company

Spanish SME specialised in IoT solutions to digitalise water management in agriculture, particularly vineyards, combining field sensors, LoRaWAN connectivity and a unified data platform for monitoring and decision support.

Smart Monitoring Platform

LoRaWAN-based monitoring platform integrating ultrasonic irrigation water meters, multi-depth soil sensors and vineyard microclimate monitoring. The system provides real-time data on irrigation volumes, soil conditions and climate variables, enabling irrigation optimisation, anomaly detection and water-use KPIs to support water footprint assessment.

CAPEX: <5,000€
OPEX: Low – routine checks and maintenance (~1 preventive check/year).
Other: Estimated water savings: 15%, Estimated energy savings: 5%

Success story (Vineyards)

Implementation of a vineyard demonstrator with Escola Agrària de Gandesa (Catalonia) where LoRaWAN meters and sensors monitor irrigation volumes and soil response, providing real-time data and traceability for vineyard water management.

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Nexmachina solutions

SPAIN

WATER MANAGEMENT & EFFICIENCY

4. Monitoring, digitalisation and automation

Digital technology company

IoT solutions company specialising in process digitalisation, energy efficiency and smart resource management through real-time monitoring and automation using the iQmenic cloud platform.

IoT Monitoring and Smart Management Solution

IoT monitoring platform using LoRaWAN sensor networks to track water and energy consumption across vineyards and winery processes. The system provides real-time monitoring of flows, tank levels and leaks, as well as energy consumption in critical assets such as cooling systems, bottling lines and machinery, supporting predictive optimisation and operational decision-making.

CAPEX: €20,000 – €50,000
OPEX: Remote platform maintenance with 1–2 sensor review interventions per year.
Other: Scalable LoRaWAN sensor network adaptable to wineries of any size

Success story (Vineyards)

Implementation at PradoRey Winery (Spain) where a LoRaWAN network was deployed to monitor irrigation and energy consumption across the agricultural estate, enabling improved efficiency and data-driven resource management.

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SENSOTEC INSTRUMENTS

SPAIN

WATER MANAGEMENT & EFFICIENCY

4. Monitoring, digitalisation and automation

Digital technology company

Company specialised in the manufacture and application of sensors and transmitters for physical and chemical parameters, providing instrumentation solutions for monitoring water quantity and quality in environmental and industrial processes.

Water Monitoring and Measurement Instrumentation

Instrumentation systems for monitoring water flow (non intrusive), volume, quality and physical parameters using technologies such as ultrasonic and magnetic flow meters, water meters and sensors for parameters such as pressure, level, temperature, pH, conductivity and turbidity. These systems enable monitoring and control of water consumption, irrigation flows and water quality in wineries and vineyards.

CAPEX: <5,000€
OPEX: Low; quality monitoring systems require periodic maintenance (~4/year), while other devices require minimal maintenance.
Other: Suitable for wineries of any size

Success story (Vineyards)

Implementation of water monitoring solutions in irrigation networks in different emplacements in Spain, including flow measurement, leak control and water quality (E-coli) monitoring for recycled water irrigation and large irrigation pipelines.

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WATENERWINE

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ULBIOS WATER

SPAIN

WATER MANAGEMENT & EFFICIENCY

4. Monitoring, digitalisation and automation

Digital technology company

Company providing digital and environmental solutions to improve water and energy efficiency in the agri-food industry through smart monitoring systems, IoT sensors, predictive models and automation tools for real-time decision-making.

Ulbios Water

Digital platform integrating IoT sensors, monitoring systems, predictive analytics and automation tools to optimise water management and operational performance. The system enables water quality monitoring, leak detection, process optimisation and data analytics through digital platforms and decision-support tools.

Success story (tourism sector)

Implementation of smart monitoring solutions in facilities such as swimming pools, spas, hotels and hospitals, enabling improved control of water consumption, early leak detection and optimisation of operational parameters.

CAPEX: €10,000 – €20,000
OPEX: Approx. €2,300–€2,500/year including digitalisation and consulting services.
Other: Estimated energy savings: 5–10%. Maintenance: approx. 2 visits/year depending on deployed sensors.

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DISIBEINT ELECTRONIC

SPAIN

WATER MANAGEMENT & EFFICIENCY

4. Monitoring, digitalisation and automation

Digital technology company

SME with more than 40 years of experience manufacturing components for industrial automation, including sensors, relays and IoT equipment for monitoring and control of industrial processes.

Industrial Level Monitoring Sensors for Liquids

Level monitoring technologies including magnetic, conductive and ultrasonic probes for continuous or on/off level measurement in tanks and liquid storage systems. These sensors improve process control and monitoring in industrial operations by providing reliable data for liquid management.

Success story

Implementation of stainless-steel level sensors (AISI 316L) in wineries and dairy facilities for monitoring fermentation tanks, storage vessels and CIP systems. Continuous level measurement enabled real-time monitoring of tank volumes, improving process control, production planning and loss management.

CAPEX: €10,000 – €50,000
OPEX: Low; probe cleaning once per year.
Other: Sensors compatible with food and beverage processes. Robust stainless-steel probes for industrial environments

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ADISA PROYECTOS

SPAIN

WATER MANAGEMENT & EFFICIENCY

4. Monitoring, digitalisation and automation

Digital technology company

Engineering and automation solutions provider focused on Industry 4.0 technologies for water and energy systems. The company develops control systems, software and automation solutions for water treatment, agriculture, and industrial processes.

Advanced PLC-Driven Water and Energy Management Solution

Automation platform combining LoRaWAN sensors, weather forecast data and PLC-based control to optimise irrigation, water management and energy consumption. The system automatically activates pumps and valves according to field conditions, forecast data and operational strategies while integrating energy price data to operate equipment during lower-cost or renewable energy periods.

CAPEX: -
OPEX: Approx. €1,500/year
Other: Suitable for wineries of any size

Success story (water sector)

Implemented in water treatment facilities where operational strategies automatically adjust plant operation based on hourly electricity prices through API integration with the national electricity market. The PLC determines start-up and shutdown sequences to optimise energy consumption and operational costs.

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FLUID.

FRANCE

Private company– IoT & SaaS technology provider for water and energy performance monitoring
FLUID is a French tech company specialising in water and energy performance monitoring for industrial sites. It develops non-intrusive IoT metering solutions combined with a SaaS analytics platform, helping organisations measure, understand and reduce their consumption in real time, with no service interruption during installation.

FLUID – Smart Water & Energy Performance Monitoring Platform
FLUID monitors water and energy flows at key winery process points via non-intrusive ultrasonic meters and real-time cloud analytics. The platform detects leaks, flags inefficiencies and delivers actionable dashboards and alerts — enabling 10–25% water savings and 5–15% energy reduction on water-related uses. Scalable and easy to deploy for any winery size, with no heavy infrastructure works required.

CAPEX: < 5000€
OPEX: 1 remote check/year. Estimated cost: <€500/year.
Other: Suitable for all winery sizes. Modular, zone-by-zone deployment.

Success story:
In a multi-building hospitality site, FLUID detected hidden leaks and abnormal night-time consumption, achieving a 22% water reduction in year one. In healthcare, it identified hot water losses and inefficient cleaning cycles, saving both water and energy. These use cases are directly transferable to wineries for cleaning, cooling and harvest peak management.

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SUREFLOW

BELGIUM

Private company - IoT & AI-powered monitoring solutions for water and energy management

SureFlow Europe (Belgium) is an SME providing non-intrusive IoT sensors and a cloud AI analytics platform for real-time water and energy monitoring. Its retrofit solutions clamp onto existing infrastructure without any modification, enabling smart resource management for wineries of all sizes.

Water Clamp Sensor

SureFlow's Water Clamp Sensor uses ultrasonic technology to monitor water flows non-intrusively on existing pipes, with no cutting or modification required. Connected to a cloud AI platform, it delivers real-time consumption visibility, automated leak detection, pipe freezing alerts, empty pipe identification and budget deviation analysis. Estimated water savings: 15–20%. Easy self-installation, supports EU Green Deal sustainability reporting.

CAPEX: Scalable — depends on number of sensors and sites
OPEX: No maintenance required. Fully remote.
Other: Suitable for all sizes. Modular, multi-site deployment possible.

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OPSIS VISION TECHNOLOGIES, SCCL

SPAIN

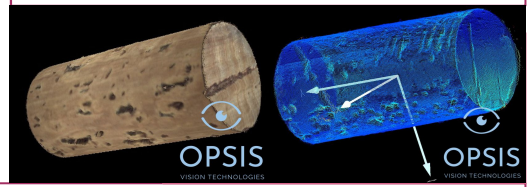
WATER MANAGEMENT & EFFICIENCY

4. Monitoring, digitalisation and automation

SCCL (cooperative SME)
Founded 10 years ago as a high-tech spin-off from the University of Girona (UdG), Opsis Vision Technologies specializes in advanced computer vision and AI solutions. With a decade of experience across diverse industrial sectors, the company bridges the gap between academic excellence and industrial reliability.

AI-powered computer vision systems for wineries
Digital monitoring and vision-based systems enable remote meter reading and real-time detection of flow anomalies and hidden water leaks. Vision sensors optimise tank cleaning by monitoring turbidity and organic load, identifying when water can be safely recirculated or cleaning is complete, thereby reducing freshwater consumption and wastewater. The technology also supports sustainable enotourism by monitoring vegetation health and soil moisture to optimise vineyard irrigation..

CAPEX: €50,000 – 100,000
OPEX: Once a year. Low cost.
Other: Installation complexity; Medium



Success story:
Opsis developed a real-time volumetric 3D inspection system that detects structural defects in bottle caps, including micro-fissures, cavities and dimensional inaccuracies, while filtering harmless patterns. The solution ensures reliable sealing, reduces downstream waste and false rejects, and integrates into high-speed production lines as a low-power automated system.

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ENERGY EFFICIENCY

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PowerfulTree

SPAIN

ENERGY EFFICIENCY

Monitoring, digitalisation & automation

Agrivoltaics Engineering

PowerfulTree (PWT) is a Spanish technology company founded in 2020, specialising in intelligent agrivoltaic systems — the simultaneous and coordinated integration of agricultural production and photovoltaic energy generation, without displacing farming activity but reinforcing it.

Monitoring, digitalization and automation; Smart monitoring and sensing systems; and simulation tools (Digital Twins).

PWT applies a technical approach based on radiation analysis, crop type, and local conditions, tailoring system design to maximize both energy output and agricultural yield. It also incorporates monitoring and data management tools to optimize operations.

CAPEX: 25.000 €

OPEX: 10.000 €/año

Other: in function of the plant characteristics.

Success story:

The results obtained in the agrivoltaic installations developed by Powerfultree in Aranda de Duero (Tempranillo) and Alicante (Malvasía) demonstrate consistent and measurable benefits at both agronomic and microclimatic levels under different climatic conditions.



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PARSEC

ITALY

ENERGY EFFICIENCY

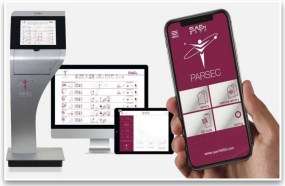
Monitoring, digitalisation & automation

Private company with over 30 years of experience, Parsec develops advanced technologies adopted by wineries worldwide; we specialise in the design, manufacturing and turnkey delivery of integrated automation and control systems for winemaking and wine aging.

TSAEn5000 Solution:
integrated temperature control system a multiprocessor BUS platform ensuring ±0.5°C precision; the Air Mixing M.I.® patented system for cap management and thermal homogenization; the ADCF dynamic fermentation kinetics analyzer, and automated yeast nutrition systems.

CAPEX: ~€50,000 – >€100,000, with medium installation complexity
OPEX: 1 preventive maintenance intervention per year; annual costs vary based on system configuration
Other: Scalable solution (suitable for small, medium & large wineries)

Success story: Energy efficiency is central to our mission. Peer-reviewed studies demonstrate that our integrated systems achieve 15-30% energy savings on fermentation thermoregulation, the most energy-intensive process in wineries (45-90% of total consumption). Parsec was awarded the **Simes Prize for Eco-Sustainable Lighting Design (2012)** for sustainable winery solutions.



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SUREFLOW

BELGIUM

ENERGY EFFICIENCY

Monitoring, digitalisation & automation

Private company – IoT & AI-powered monitoring solutions for water and energy management

SureFlow Europe (Belgium) is an SME providing non-intrusive IoT sensors and a cloud AI analytics platform for real-time water and energy monitoring. Its retrofit solutions clamp onto existing infrastructure without any modification, enabling smart resource management for wineries of all sizes.

Electrical Panel Sensor

SureFlow's Electrical Panel Sensor mounts magnetic strips above existing circuit breakers — no electrical modifications needed. It monitors up to 40 consumption points simultaneously (fermentation chillers, HVAC, lighting, processing machinery), detects ghost loads and maps energy-intensive zones via AR visualisation. Connected to a cloud AI platform for budget alerts and sustainability reporting. Estimated energy savings: 15–20%.

CAPEX: Scalable — depends on number of sensors and sites
OPEX: No maintenance required. Fully remote.
Other: Suitable for all sizes. Modular, multi-site deployment possible.

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ONAFIS

FRANCE

ENERGY EFFICIENCY

Monitoring, digitalisation & automation

Private company (SAS) – AI & automation technology provider for winery operations

ONAFIS brings Industry 5.0 into wineries through connected technologies that automate traceability across the entire wine lifecycle. Its solutions help estates secure their oenological targets while significantly reducing operational costs, energy consumption and human error throughout fermentation and aging.

Smart Energy Grid

ONAFIS combines real-time monitoring, AI and automation to optimise winery resource management. Its Smart Energy Grid delivers 20–40% energy cost savings. Smart CIP replaces fixed cleaning protocols with turbidity-sensor-based results, eliminating water waste. During aging, VPD-based humidity automation prevents wine evaporation and mould while conserving water. Estimated water savings: 30%; CO_2 reduction: 10–30 tonnes.

CAPEX: 50 000€ - 100 000€

OPEX: 4 000€ – 9 000€

Other: Suitable for all winery sizes. Medium complexity.

Success story:

Château Latour: 33% energy reduction, preventing 10,000 kg of CO_2 equivalent — highlighted in their Vigne d'Or 2023 application. Château Vieux Certan: 20% cut in energy costs and 1% reduction in wine loss through precise atmospheric control during aging. Both cases demonstrate ONAFIS's ability to combine luxury production standards with high environmental performance.

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WATENERWINE

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Erbslöh Geisenheim GmbH

Germany

ENERGY EFFICIENCY

Monitoring, digitalisation & automation

GmbH (Private limited company)
Erbslöh Geisenheim GmbH is a leading technology partner for the wine, juice, brewing and distilling industries, with over 130 years of experience and operations across Spain, France, Germany and Austria. Its network spans more than 70 countries, combining production, research and technical consulting, while developing solutions in oenology, fermentation, stabilization and clarification. With particular expertise in enzyme preparations, Erbslöh improves process efficiency while reducing energy and water consumption, waste and processing times, combining scientific innovation and technical expertise to support sustainable, resource-efficient beverage production.

Enzyme Portfolio for Resource-Efficient Winemaking
Erbslöh's enzyme portfolio enables measurable resource savings in wineries. Optimised enzymes can reduce press time by 25% and clarification times by up to 50%, lowering energy needs. In red wine production, enzymes improve extraction at lower temperatures, while enzyme-aided pressing increases must yields and shortens cycles. Enzymes also accelerate yeast autolysis and maturation, while improving filtration efficiency, extending filter life and reducing energy, water and cleaning chemicals.

CAPEX: <5,000€
OPEX: Some basic initial training required (approx. 1 hour).
Other: Installation complexity: Low
Scalability: Yes, suitable for all sizes & can be tailored to specific needs without any extra costs.

Success story

In 2024, a cooperative approached Erbslöh to optimise its press protocols. Following a detailed process evaluation, a comparative trial was conducted using their standard enzyme and a specialised Erbslöh formulation. Laboratory analysis of pressed grape material showed higher residual moisture with the standard enzyme. The specialised product reduced press times by 11% while simultaneously increasing yield by 6.5% in volume.



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Intergia energía sostenible, SL

SPAIN

ENERGY EFFICIENCY

Monitoring, digitalisation & automation

SME

Intergia is an engineering SME founded in 2008 in Zaragoza, Spain, specialising in clean energy and sustainability solutions for rural and industrial sectors. Its expertise includes hybrid renewable energy systems, rural energy applications such as farms and wineries, EV charging, green hydrogen, and environmental sustainability consultancy. Since 2013, Intergia has participated in regional, national and European R&I projects, focusing on energy control, advanced microgrids, fast EV charging, clean hydrogen and climate change mitigation in the wine and agrifood sectors. It has been a member of the Spanish Wine Technology Platform (PTV) since 2011.

Smart energy controller for microgrids

The technology involves integrating all electricity consumption—from the winery and, where applicable, the vineyard into a modular, scalable microgrid alongside renewable generation, dispatchable generation, and energy storage. The entire system is monitored and controlled by an intelligent system that ensures supply, minimizes investment and operating costs, and reduces associated CO_2 emissions. The system can operate either connected to or disconnected from the electrical grid. It is adaptable and transferable to other agri-food sectors, agricultural operations, and irrigation facilities.

CAPEX:
approx. €20,000
OPEX:
Annual preventive maintenance visit
Other:
Complexity medium



Success story:

The technology was developed and validated by Intergia through the LIFE CLIMAWIN project at Bosque de Matasnos winery and vineyard in Ribera del Duero. The off-grid site previously relied on a diesel generator and limited photovoltaics. The new microgrid supplies the winery, irrigation and auxiliary facilities through solar energy and storage. In 2025, it achieved a 77.74% renewable fraction, saving 4.22 kL of diesel, reducing emissions by 12 tCO_2eq/year and cutting operating costs by over €6,000 annually.

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WATENERWINE

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RENEWABLE ENERGIES

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WATENERWINE

CARBON FIELDS

SPAIN

RENEWABLE ENERGIES

Bioenergy and waste-to-energy system

Technology startup

Startup - Carbon Fields transforms biomass into bioproducts and bioenergy. They develop, co-invest, build and exploit plants that transform un-valorised biomass into heat/biogas, and bioproducts for the agricultural sector, such as soil amendments and biofertilizers.

Waste-to-methane plant (pyrolysis and syngas upgrade to obtain different subproduct).

Small-scale green waste-to-biomethane plant using an innovative combination of pyrolysis and bio-methanation. The technology transform woody biomass (for example, fruit tree pruning, cities pruning residues, residues from forest management, compost dry matter, etc) into biogas.

CAPEX: Scalable — depends on size and conditions.
OPEX: in function of the solution size.
Others: Medium installation complexity.

Success story

Valorization of cities pruning waste and compost dry matter into biochar specifically produced to be used together with AD plant digestates as a soil amendment - **FENIX project (EU funded project).** Participation in project to demonstrate novel and cost-effective biomethane production solutions to support circular economy and reduce dependence on fossil fuels. **SEMPRE-BIO (EU funded project)**

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WATENERWINE

PowerfulTree

SPAIN

RENEWABLE ENERGIES

Solar energy systems

Agrivoltaics Engineering

PowerfulTree (PWT) is a Spanish technology company founded in 2020, specialising in intelligent agrivoltaic systems — the simultaneous and coordinated integration of agricultural production and photovoltaic energy generation, without displacing farming activity but reinforcing it.

Renewable energy sources / Solar energy systems

PWT's agrivoltaic technology integrates agricultural production and photovoltaic energy generation within the same land area, optimizing land use and increasing overall productivity.

CAPEX: 0,84 €/Wp

OPEX: 15.000 €

Other: in function of the plant characteristics.

Success story:

The results obtained in the agrivoltaic installations developed by Powerfultree in Aranda de Duero (Tempranillo) and Alicante (Malvasía) demonstrate consistent and measurable benefits at both agronomic and microclimatic levels under different climatic conditions.



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RENEWABLE ENERGIES

Solar energy systems

leoenergy

MB LEO Consult (LEO ENERGY)

Lithuania

Private limited company (SME)- Deployment of renewable PV systems

LEO ENERGY is a Lithuanian clean technology SME specialising in photovoltaic systems, battery energy storage, and EV charging infrastructure to help wineries and industrial clients reduce energy costs and carbon emissions. Its modular and scalable solutions enable self-generation, peak demand management, and logistics electrification, supporting EU green transition goals.

Technology short description / benefits:

LEO ENERGY delivers integrated photovoltaic, battery energy storage, and EV charging solutions that reduce grid dependence, optimise energy use, and cut operational costs. Our EMS platform enables smart monitoring, predictive optimisation, and digital simulation of winery energy flows. BESS systems support peak shaving, heat recovery, and seasonal load balancing, while PV and hybrid configurations increase renewable self-consumption. EV chargers enhance enotourism and logistics. The solution is modular and scalable, suitable for small wineries and large estates, with measurable CO_2 savings and cost reductions.

CAPEX: €50,000 – 100,000 (marked as selected range)
OPEX: Approx. €3,000–€5,000 depending on system size and configuration
Other: Scalability: Yes – the solution is suitable for small, medium, and large wineries

Success story:

At a drinks delivery company serving vending machines, they installed a battery energy storage system (250 kWh) with EV chargers, enabling peak shaving, logistics electrification, and reduced grid dependence. In the food manufacturing sector, a butcher's shop was equipped with BESS and EV charging to support cold chain operations and resilience. At TOWER shopping mall, they deployed four BESS units (100 kW / 241 kWh each) with EMS predictive optimisation, digital models to assess consumption, and simulation tools to propose improved energy strategies.



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