

LIFE AQUASEF. ECO-efficient Aquaculture



HEBRON (Palestine), 16 may 2017
Spin-off

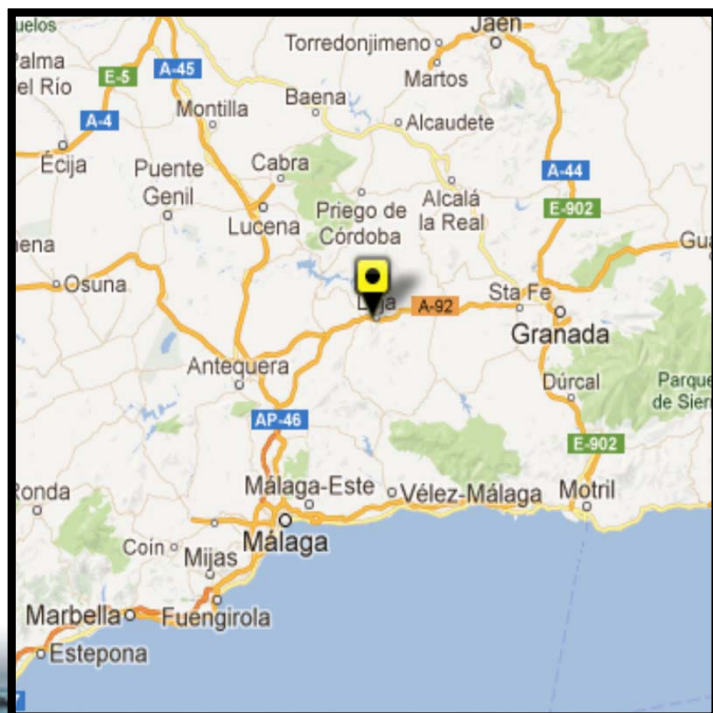




AQUASEF
ACUICULTURA ECO-EFICIENTE

CANELA FISH FARM

Project Situation



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PROJECT SITUATION



New Tech. installation for testing. AQUASEF





Installation scheme AQUASEF. Special PV compact for coast areas developed by INOMA Renovables



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CONSORCIO



SPIN-OFF CONSORTIUM AQUACULTURE COMPANY RESEARCH CENTER

INOMA Renovables	Energy saving, Energy optimization and Renewable Energies.	
ESTEROS CANELA	Installation use, real test of renewable energy in saline environment . Test of high efficiency aeration systems. Microalgae production as fish food and energy resource	
DROPPS AND BUBBLES	Optimum design of aeration systems. Improvement of microalgae production. CO2 recycle	
CTAQUA	Result Dissemination. Technology transfer to aquaculture industrial sector	
ARIEMA ENERGIA Y MEDIOAMBIENTE S.L.	Hydrogene technology demonstration. Energy storage and improvement of aeration by O2 from electrolysis process	

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AQUASEF: SUSTAINABLE AQUACULTURE

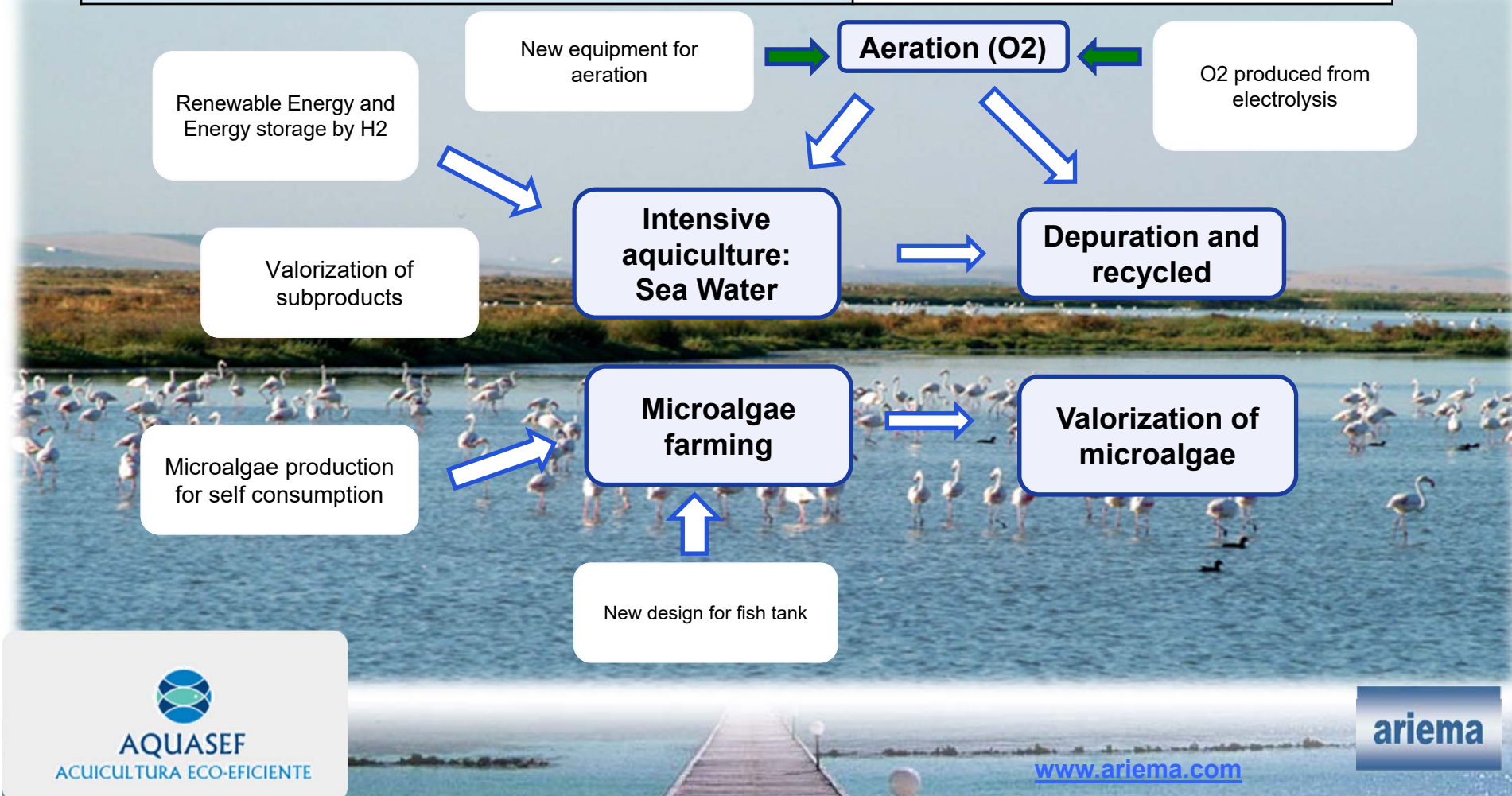
Supply of O₂ to fish farm tanks



CARACTERISTICAS

Oxygen Direct Supply to fish tank from electrolysis to reduce the cost of O₂ brought to gases provider.

TOTAL BUDGET OF THE PROJECT	1.559.685,00 €
PROGRAM	LIFE+ europeo
INDUSTRIAL SECTOR	SECTOR ACUICOLA

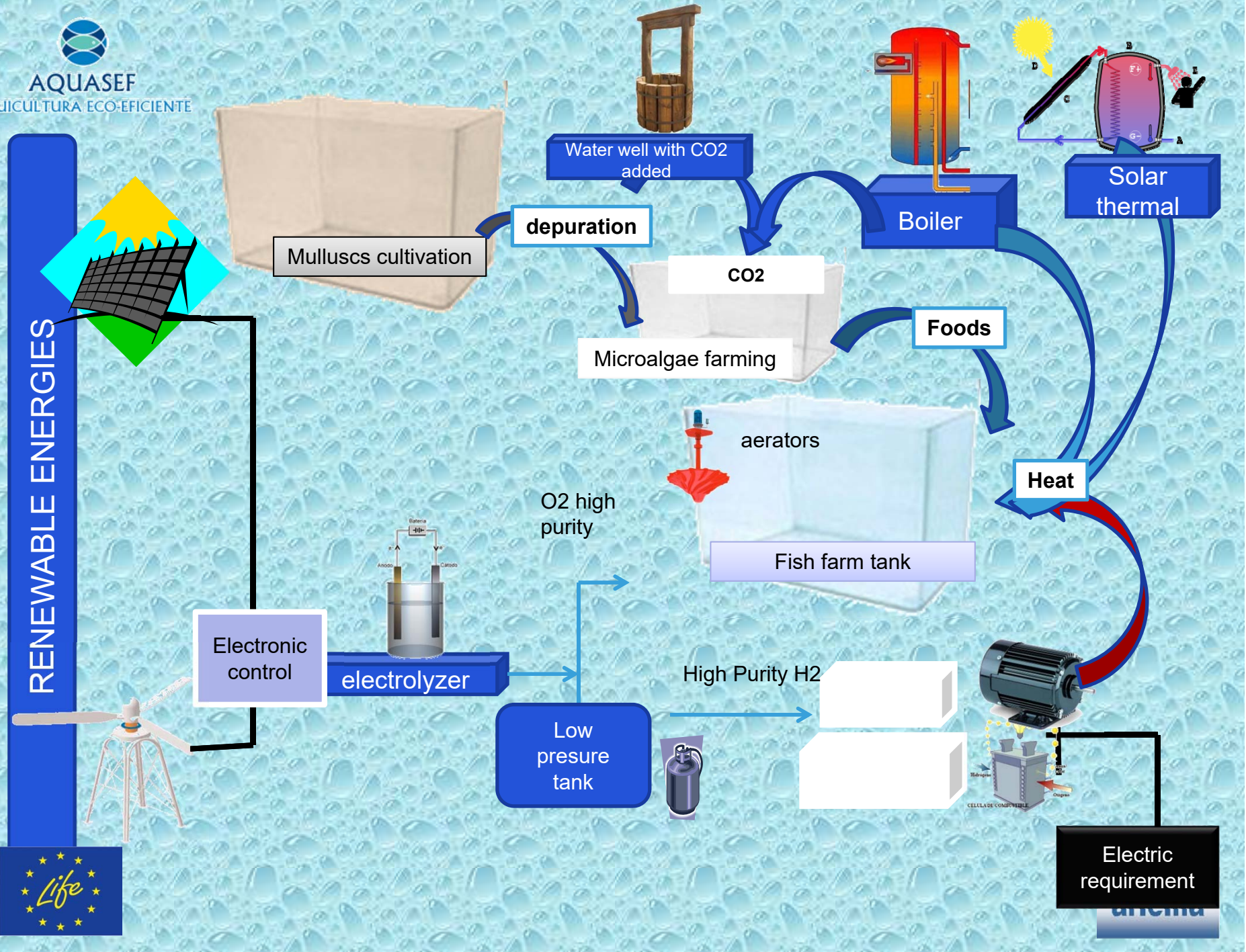


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RENEWABLE ENERGIES





OBJETIVOS DE LA PROPUESTA



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УСПЕШНОЕ ЛОЖУ ЕКО-ЕФИЦИЕНТЕ

OBJETIVES.

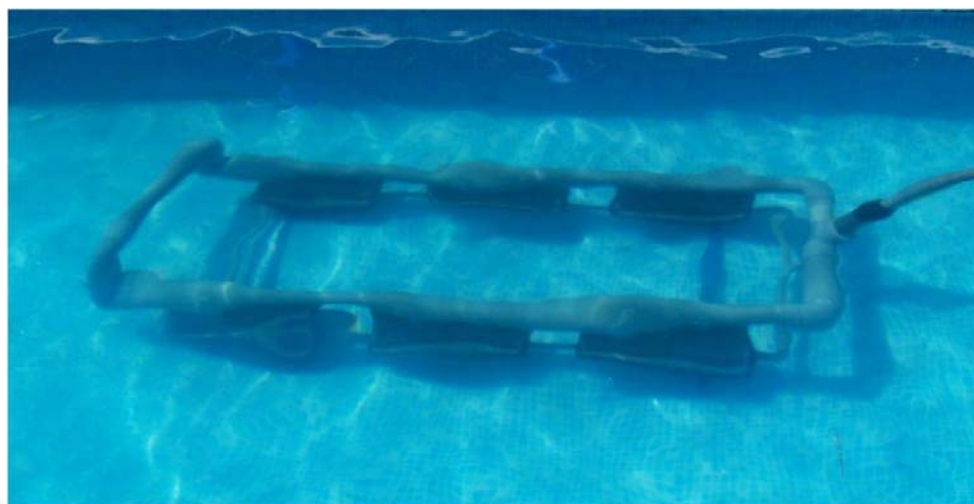
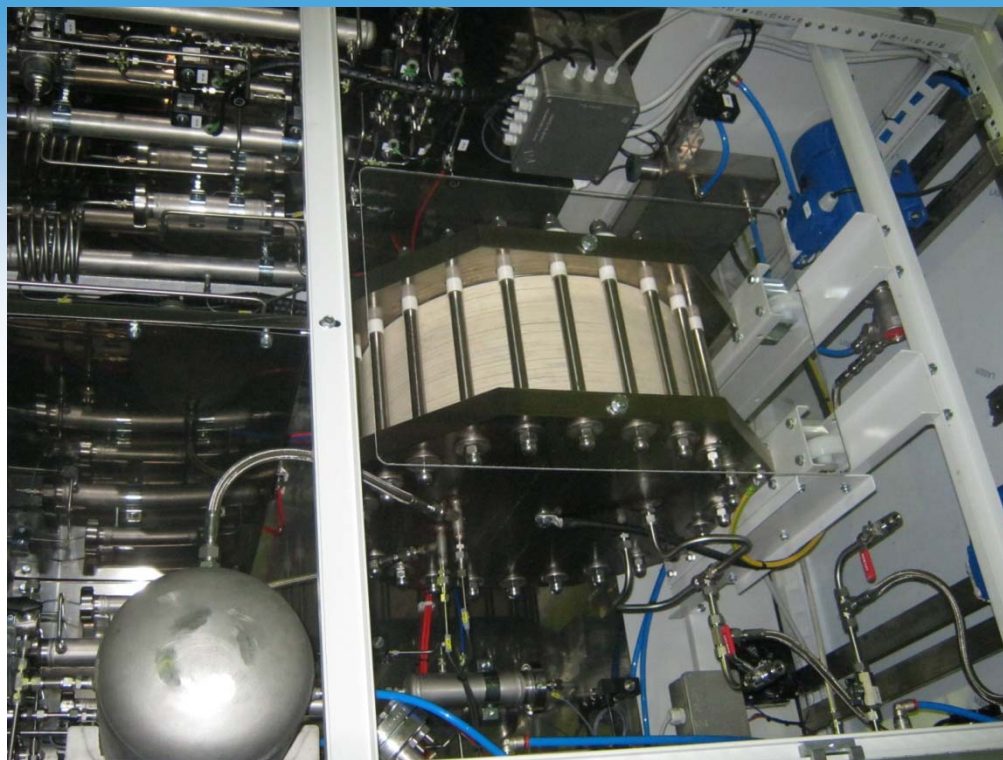
- ❖ **Environmental innovation:** Improvement of depuration cycle, recycled of water and CO₂ production to use in microalgae
- ❖ **Energy innovation:** RE use in this sector for self consumption, self production of O₂ for fish farm process and H₂ as energy vector.
- ❖ **Technological innovation:** New equipment use for more efficient dissolution of O₂ in the fish water tank. New design of fish tank.
- ❖ **Economical innovation:** Very strong reduction of liquid O₂ required for fish farm process (liquid O₂ is very expensive), microalgae farming for fish larvae food and energy recovery.



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PICTURES



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FOTOS



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FOTOS



Molluscs area

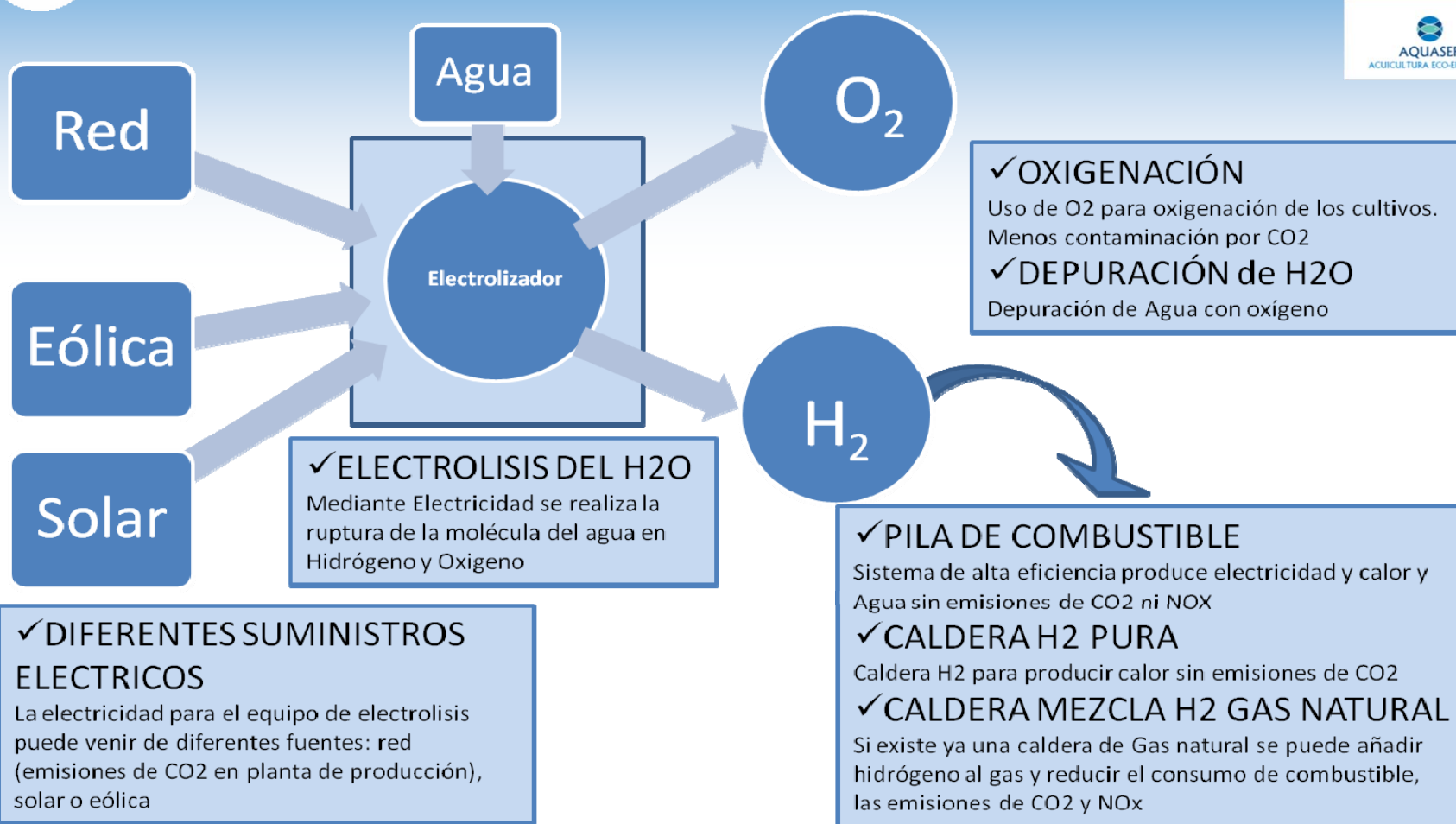


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AQUASEF: H₂ AND O₂ USES IN AQUACULTURE



✓ VENTAJAS DE UN SISTEMA DE PRODUCCIÓN DE H₂ y O₂ EN ACUICULTURA.

- ✓ Un Sistema con reducción de CO₂ (podría llegar a eliminarse completamente las emisiones de CO₂ y NO_x).
- ✓ Un Sistema eficiente que permite producción local.
- ✓ Un sistema con alto valor tecnológico e innovador (nunca se ha llevado a cabo una instalación de estas características).





Activities AQUASEF



- 1.- *Renewable Energies for electricity generation for self-consumption or energy storage by H₂ tank.*
- 2.- *Electrolytic H₂ will be stored in a pressure tank as energy source to answer of energy requirement. The H₂ can be use in fuel cell or in a boiler mixed with biogas from depuration anaerobic process of organic waste.*
- 3.- *The effluent from fish farm tanks will be use as fertilizer of microalgae farming in a new equipment much more efficient.*
- 5.- *The **CO₂ produced** from boiler combustion is recycled in the microalgae farming with new prototype of micro bubble generation.*
- 6.- *The Electrolytic **O₂** is used for oxidation of organic materia in a biologic reactor or direct injection in a fish water tank.*
- 7.- *Global **Reduction carbon footprint** in a complete farming cycle*
- 8.- **Disemination of results**

Thank you for your attention

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