

European Social Innovation Competition

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I/we enter the competition as:*	An individual
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Website	http://www.spawhe.eu
Project Name *	COASTAL WATER PURIFIERS OF SEAS AND LAKES (CWPSL)
Tweet your ideal *	The eutrophication of lakes and seas, it be fought with vertical pits along coasts that alkalize and oxygenate the water, extract or consume
Choose the field to which your idea relates mainly: *	Climate and environment
Provide a summary of your idea, highlighting how it solves a social need or societal issue. *	<p>The eutrophication problem, due to the presence of unwanted nutrients in the water (phosphorus, nitrates, fecal coliform, organic and inorganic carbon) that escape to purify the water. It is particularly serious in the lakes and sea basins with little spare and at the mouths of rivers. The pits purifying vertical were designed by me for GUED (global urban environmental depuration) but also apply to CWPSL. In fact, both systems are based on the use of vertical pits aired superficially, that consume CO2 in greenhouses limestone superimposed on the oxidation basin and extracting the anaerobic sludge from the lower part, which are sent to the GSPDPTC (global synergy plants for depuration, biomass production and thermoelectric cogeneration) to produce biological energy). Moreover, we can treat enormous flow of water present or water that enters in the body through the parallel connection of several vertical pits. We can feed these plants by renewable energy produced on site by pulling from the same basin through the exploitation of the hydrostatic pressure of the water by SHOS (submerged hydroelectric plants for energy production, oxygenation of seabed) who also co-purification of the seabed. GSPDPTC and SHOS, are described in other tabs of the competition.</p>
Explain why your idea is innovative in the context and in the country where it will be implemented. Alternatively, if your idea is based on an existing concept, explain how your idea differs from this. *	<p>Coastal water purifiers of seas and lakes (CWPSL), such as urban arises from many existing concepts but</p>

never put together rationally. After have think that purifying vertical pits solve problems depurative of water and urban air, producing energy by means of sludge extracts, the undersigned has thought it could do so in order to reduce eutrophication, sending mud extracts to energy systems compatible closer. So even these systems would fit into the global system energy and protective of the environment. The nutrient-rich water, lifted by pumping stations, is distributed in the pits, where it is oxidized by spread of air which oxidize only the surface water, where takes place also photosynthesis thanks indoor and illumination naturally or artificially. In the greenhouse, the CO₂ produced by the oxidation treatment, stratifies on water and is used both to increase the production photo synthetic consuming the nutrients, both to produce carbon ates, by means of an artificial rain on limestone boulders stored, which also increase the alkalinity of the purified water. It 'important to realize these systems where rainwater arrives by making them work in winter with the water that enters and in summer with that which is raised from the same basin.

Describe clearly how your idea is expected to have an impact. *

Coastal water purifiers of seas and lakes (CWPSL) is a simple idea but very efficient. The environmental impact is minimal because most of pits developing in depth, while on the surface you will see only the lit greenhouse that will be used for photosynthesis and the storage of limestone material that will produce alkalinity cold, subtracting CO₂ to the environment, without producing other again. European regulations provide for the attainment of the status of "good" of surface water by the year 2015. These commitments hardly have been met, if the purification systems have not changed. Although the objectives were partially achieved, does not mean that it could not do better. In fact, the improvement of alkalinity coastal sea water was not expected. As long as the authorities do not put environmental objectives of global purification, limiting only to do partially purify of urban and industrial waters neglecting those agricultural and without worrying much of alkalinity, not solved nor environmental problems and neither those jobs. Many people might find work making these systems worldwide. The calcium that serves could be extracted by the same sea, as described in another tab of competition: floating ponds for chemical precipitation oceanic calcium carbonate (FPPCC)

Indicate at what scale your idea will operate initially and how it could be implemented at a larger scale in your country or in Europe in the future *

The realization on a large scale of coastal water purifiers of seas and lakes (CWPSL) is essential to combat eutrophication that increases water acidification and therefore global warming. In fact, the problem of ocean acidification must be fought primarily along the coastal areas that have the lowest PH compared to areas far from the coast. This is obvious because in coastal areas come all the fresh waters of the rivers land, but it is also obvious that the fermentations acidic pollution contribute to lower the pH. These systems are connected to the global energy system GSPDPTC, but can also be operated without being connected to this system if located in areas far from it. They can self-powered by renewable energy produced on site by pulling from the same basin through the exploitation of the hydrostatic pressure of the water by SHOS (submerged hydroelectric plants for energy production, oxygenation of seabed): the methane produced in the bottom of the pits rising upward and passing through the oxidized zone turns into water and CO₂, The latter is used to produce alkalinity in the artificial rain produced in greenhouses limestone with the water surface. GSPDPTC and SHOS are in other tabs of competition

Specify how your idea could be sustained over the next three years. *

In three years we can achieve many plants because the technologies are already in existence. These systems may be combined with hydropower submerged (SHOS) that downloading the surface water in the depths, brings oxygen fighting death for anoxia and also allows a slight rise in nutrients submerged which increases the abundance of fish. In addition to combating eutrophication produce alkalinity in the water thanks to the recovery of CO₂ in greenhouse limestone, but also give the possibility of choice to the managers use of sludge for energy purposes by means GSPDPTC connection or to enhance the oxidation and greenhouses limestone to also use gas fermentation to produce calcium carbonate. If we couple these plants to a large thermal power plant located nearby, we can use the hot water produced from the plant to heat the digestion zone, and also strengthening the size of the greenhouses limestone (VCLMG), we can transform all the CO₂ content in the flue in carbonate to combact the acidification of the ocean or the lake, but in this case we must also capture the fumes with chimneys CCPC and channel them in the greenhouse. (GSPDPTC, SHOS, VCLMG, CCPC, are described in other tabs of the competition)