

European Social Innovation Competition

Name *	Luigi Antonio Pezone
Email *	luigiantonio.pezone@gmail.com
I/we enter the competition as:*	An individual
If you're a representative, please name the organisation/company	Private
Language of entry *	English
Street Address *	Via Caserta parco Verde, 5
Address Line 2 *	Via Caserta parco Verde, 5
City *	Santa Maria Capua Vetere
Postal / Zip Code *	81055
Country *	Italy
Phone Number *	+39(0)823796712
Website	http://www.spawhe.eu
Project Name *	CAPTURE COOLING PURIFICATION CHIMNEYS (CCPC)
Tweet your ideal *	The chimneys are the final element of the combustion cycle, if we change, they also become the initial element of the heat recovery and CO2
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 chimneys CCCP are equipped with an expansion chamber at the upper end which slows the speed of the fumes that are forced to pass through the electrostatic filters, which reduce dust, SOx, NOx, and by means of electric fans bring down all the fumes or only a part of the output of the filter (depending on the heat and CO2 that is meant to recover). Even with a partial recovery will capture the CO2 that is 1.5 times heavier than air. The path of descent is in a annular gap in which is placed a tube bundle in which circulates water that recovers the heat content in the flue gas that is used to feed the preheated heating boilers of hot water consumption. The filtered air that contains the CO2 is used to oxidize the waste water, but also to respond with the same water and calcium ions extracted from calcareous material stored above the oxidation basin, by means of an artificial rain, created by lifting the urban wastewater to be purified; which is dropped from above on the calcareous material by means of trays with triangular profile overflow and return to the oxidation basin.</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>The capture cooling purification chimneys (ccpc) is a novelty that has received the recognition of international patent (N. Patent WO2014/076724). For the undersigned the production of fossil energy, biological, air purification and water, should be included in a single system, and therefore also the global</p>

urban sewage (GVED) must be completely redesigned, by inserting in the urban sewers purifying water and air. Even if in the future in the cities will use in homes only electrical energy, until exist thermal engines, the chimneys that capture fumes or urban smog serve equally, because it will be used, as well as to purify the fumes, also to separate heavy gases (CO₂ and SO_x) and particulate matter, which in the absence of winds stratify in the lower atmosphere, causing serious lung disease populations. But the chimneys are not enough, in fact, need to be coupled to fans to entering into the central pipe polluted air or fumes, but they also need the CO₂ underground storage tanks pending further treatment purification and of a network of co₂ compressed that distributes it to the greenhouses and purifying pits, as described in other tabs of the competition.

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

We already have enough technology to defeat pollution and global warming. The CCPC chimneys are the starting element for a new industrial revolution that protects the environment, not destroy it as the previous revolution, unfortunately still ongoing. The industrial chimneys CPC may be made of reinforced concrete, by simply modifying existing ones, creating the upper expansion chamber, in which will be mounted in the electrostatic filter, custom built; and creating around the fireplace the annular chamber for the containment of the tube bundle that recovers the heat. In large chimneys you can enter a spiral staircase to climb to the top expansion chamber and a removable wall of separation in insulated metal panels that separates the staircase from the area in which circulate the fumes, which also contains the tube bundle. Urban chimneys CCPC however, will be built in series of modular elements, with special pieces for the connections of the water and the fumes. They will combine the existing buildings or be incorporated in the same. To reduce the visual impact can be mounted in removable prefabricated panels of the same color of the building.

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 *

There is no problem of immediate realization of urban chimneys, which can be produced in a complete series of special pieces for the rapid assembly on site of the components, while they are more complex ancillary works for the neutralization of CO₂, which require space in the subsoil, and for the volumes required to the accumulation of CO₂, both for the positioning of the CO₂ water purification systems. The problem does not exist for new buildings, while to realize them in existing cities is necessary to make the adaptations on the basis of existing works. but these are not insurmountable because the CO₂ can be stored in rooms above ground existing, properly sealed. No problem even for changing the chimneys of thermal plants of large size. But large plants to neutralize the CO₂ and recover waste heat missing in air and water cooling, need large spaces and other water, which the designers have not provided. The solutions should be studied case by case basis by the individual chimneys and delivering smoke in different directions where you will find the space and the water necessary.

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

In three years can be realized pilot plant demonstrative of efficiency, purifying water and air together also including chimneys CCPC, which can not be understood unless we realize the system GSPDPTC: Global Synergy Plants for Depuration, Biomass Production and Thermoelectric Cogeneration . After it is necessary to adapt existing regulations, outlawing fossil plants, biological and purification can not be connected directly or indirectly to the above system (described gradually in fifteen cards in this contest, and one in particular called GSPDPTC). It is not enough avoid polluting but that all comes back to his place. The regulations can be changed only if you accept to experience global innovations that can not be based on individual inventions, but related inventions. The CCPC chimneys are fundamental but they play only a part of the global purification cycle. Environmental designers, public and private, have to manage a capillary action of modification of existing facilities, create plants that lack in the territories according to the mentioned system, based on synergies between existing technologies and the available water resources. The new civil construction industry, energy, cleansing must have the characteristics of "connectability to the system GSPDPTC". Those thermal, small or large, must have chimneys CPCC.