

# European Social Innovation Competition

<b>Name *</b>	Luigi Antonio Pezone
<b>Email *</b>	<a href="mailto:luigiantonio.pezone@gmail.com">luigiantonio.pezone@gmail.com</a>
<b>I/we enter the competition as:*</b>	An individual
<b>If you're a representative, please name the organisation/company</b>	Private
<b>Language of entry *</b>	English
<b>Street Address *</b>	Via Caserta parco Verde, 5
<b>Address Line 2 *</b>	Via Caserta parco Verde, 5
<b>City *</b>	Santa Maria Capua Vetere
<b>Postal / Zip Code *</b>	81055
<b>Country *</b>	Italy
<b>Phone Number *</b>	+39 (0)823796712
<b>Website</b>	<a href="http://www.spawhe.eu">http://www.spawhe.eu</a>
<b>Project Name *</b>	HEATING AND COOLING INTEGRATED IN ENVIRONMENT (HCIE)
<b>Tweet your ideal *</b>	The heating and cooling sustainable can not be achieved without geothermal low enthalpy and heat exchange towers.
<b>Choose the field to which your idea relates mainly: *</b>	Climate and environment
<b>Provide a summary of your idea, highlighting how it solves a social need or societal issue. *</b>	<p>Heat pumps, CCPC (capture cooling purification chimney) induce to design heating and cooling with better yields. In fact can be added to these inventions also AFTET (air filtration and thermal exchange tower) and GPCG (geothermal pit coated with gres) that, together, will constitute the element of the intermediate heat exchange between the heat pumps and urban internal environments. With this system we can have air conditioning in summer and winter sustainable. In fact, it is more economical to recover the existing geothermal energy than producing new energy. To achieve the plants need three volumes inertial of water: 1o in the CPCC chimneys, to reduce the temperature difference necessary for the production of hot water and replenishing the rescaling; 2o in geothermal pit, that exchanges heat with the surrounding land (12-14 oC) for simple conduction, reducing the temperature drop of the water in the initial stage of heating in winter, and in creasing it during the summer; 3o in the AFTET tower, which exchanges heat with the fresh air and with the air of indoor recycling, eliminating air exchange unit air outside homes, which help to heat of the city in summer. Acronyms are described in other tabs of competition,</p>
<b>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. *</b>	<p>Heating and cooling integrated in environment (HCIE) arise from many plants that precede them, but previous installations have never been integrated and rationally connected with the external environment</p>

and geothermal subsoil. Today is dismantling the large air-conditioning systems with cooling towers and chillers, in part because these plants have produced serious lung diseases such as "Legionella" due to of the bacteria that lurk in the filters and water recycling. In HCIE chillers, and boilers are replaced by economic and little heat pumps that can produce hot and cold water with lower costs. Today it is prefer heating systems that are separate from the summer air conditioning, which is made with fan coils internal and external drives with air-air heat exchangers, which have the disadvantage of transferring the internal heat of the apartments to the outside air. The invention of the undersigned allows to realize unique installations for summer and winter that solve both the problem of pulmonary diseases, both air filtration, which may be carried out at the entrance of AFTET, both avoiding heat of the outside air of the city, exchanging the hot and the cold with the subsoil. Acronyms are described in other tabs of competition.

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

Heating and cooling integrated in the environment (HCIE) are achievable with current technology, but some parts of the plant, as CCPC and AFTET are designed as structural works of the buildings that serve even if we do not use fuels that produce smoke. In fact, these, in addition to the service of individual buildings, are also used for public treatment of water and air. It's important because, today, in any city exist escape routes for pollution (SOx, particulate matter, CO2), which, being heavier than air, in the absence of wind, stagnate in lower atmosphere, producing lung diseases. CCCP and AFTER, being constituted by a channel inside which connects subsoil to atmosphere and an outer channel which contains the heat exchangers, must use the internal channel for connection of purifying vertical urban pits and underground storage of polluted air with atmosphere, to allow the densification of the gas to be purified by CCPC, at the same time to be the escape routes of the light urban gases that must climb into the atmosphere by AFTET, while GUED proceeds to purifications of water using polluted air for the oxidation and the production of carbonates. Acronyms are described in other tabs of competition.

**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 of large-scale of Heating and cooling integrated in environment (HCIE) together with the global urban sewage (GUED) is essential to protect the health of citizens, combat global warming and to prevent disasters even more serious. In fact, the fumes captured and purified in the same city are not going to produce atmospheric dust that is deposited on the glaciers also forcing them to absorb more sunlight and facilitating the melting. It is necessary to realize now the prototypes of all the works related to the realization of global projects (GUED) and produce very strict international standards, so that the local treatment not integrate in global treatment, will be gradually eliminated. The use of renewable energy, as, vertical hydropower recycling water (VHRW) for powering Heating and cooling integrated in environment (HCIE), allows to lighten the load of the purifiers of GUED that can treat better pollution from urban traffic. These renovations will have to be encouraged by governments. Acronyms are described in other tabs of competition.

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

in three years we will be able to realize many prototypes of Heating and cooling integrated in environment (HCIE) together with the global urban sewage (GUED). Today the cheapest way to create the warm and the cold is the use of heat pumps gas, which, while having the yield of just over electric heat pumps, are not penalized by the low efficiency of thermal power plants (on average 36% ) and the transport of electricity leaking street about 11% so the comparison is all in favor of the use of gas. Probably, the only energy that will break the monopoly of the gas in this area is vertical hydropower recycling water (VHRW). This energy, which does not exist today, is producible in a condo, or a simple home, may even be associated with plants HCIE, using the same water. In other words, in summer we produce energy with chilled water and hot water in winter, increasing the potential and the thermal inertia of the plants. Since water must circulate anyway to produce energy, to circulate the water with operating temperature is a performance that leads to a minor work of heat pumps. Acronyms are described in other tabs of competition.