Open letter to Mr. Elon Musk who promised 100 million dollars to those who manage to capture CO2 from the atmosphere.

Dear Mr. Elon Musk, I hope to be able to participate in this competition too which, in 2012 I patented at national and international level the capture of CO2 at the exit of the chimneys, which I have virtually modified, creating an expansion chamber before the exit section, a double external chamber and a fan at the base of the chimney, to bring the CO2 back into the subsoil. As you know, being CO2 heavier than air, it would easily allow itself to be captured by the depression produced in the expansion chamber and we could use it to create artificial rains in small limestone greenhouses that oxygenate and alkalize the water to be purified. In this way we will anticipate the purification processes in the sewers that today only produce damage, producing hydrogen sulfide, ammonia nitrogen, sulfuric acid and producing carbonates useful for combating the acidification of rivers, lakes and oceans (**http://www.spawhe.eu/capture-cooling-purification-chimneys-ccpc-international-patent-n-patent-wo2014-076724-and-subsequent-invention-air-filtration-and-thermal-exchange-tower-aftet/).** My proposal was and is perfectly integrated into the natural cycle of anthropogenic carbon; but strangely, it has not been understood by the governments, scientists and energy and purification entrepreneurs of the world.

The reason why thermal plants, steel mills, man-made incinerators are wrong is not because they emit CO2. This cannot be avoided with combustion processes. They are wrong

because CO2 reaches the atmosphere undisturbed. The public and private designers of thermal systems have acknowledged that CO2 cannot be broken down by filtration, not even with electrostatic filters, since it is a non-polar molecule. They know well that the reaction CaO (s) + H2O (L) + CO2 (g) = Ca (HCO3) 2 (s) would be enough to break it down chemically, but unfortunately the production of calcium oxide (CAO) can only be done by heating the limestone rocks (CaCO3) at about 1000 degrees of temperature, this operation involves the emission of 1.57 kg of CO2 into the environment (CaO + CO2), only based on the molar weights of the components, in addition to the CO2 emissions emitted by the fuel used to produce heating. Therefore, this solution does not solve the problem of CO2 emissions. Therefore, even the ovens that produce the calcium oxide used in construction should be flanked by a limestone greenhouse, with artificial rains to produce hydrogen calcium carbonate Ca (HCO3) 2 at room temperature, which exists only in liquid solution. In the same way, even the blast furnaces, incinerators and thermal power stations should enter the fumes directly into the limestone greenhouses, or modify the chimneys, as proposed by the undersigned.

Dear Elon Must, as a world successful inventor and entrepreneur, you should know that the first steps of the most important inventions in world history are the most difficult because they have to clash with existing inventions that dominate the world market even if they are scientifically wrong Although no government has financed this invention of world public utility, I have continued to work on the topic of global purification of the environment. Not having the political and economic power to modify all the smokestacks in the world and the public and private facilities behind them, I concentrated on subsequent inventions, which no government and no entrepreneur would have developed, not having the entire world ruling class wanted. modify the very simple chimneys. In fact, developing subsequent inventions, to economize interactive processes, interactive energies have also come

out, which do not involve the emission of CO2 heat and not even steam which is equally a greenhouse gas. However, let’s proceed step by step. As you well know, carbonates are not very soluble in water and therefore the purification process requires the circulation of a large amount of water which should have prevented competent designers from building the current large thermoelectric plants. Furthermore, the large circulation of water required would have required a large absorption of energy and consequently another large amount of CO2 emissions. For these reasons, the current large thermoelectric plants are already obsolete, having to be built of smaller dimensions to be able to carry out the complete cycles that should have reduced CO2. Unfortunately, in the face of such serious design errors, which involve the entire world ruling class, including scientists and inventors, for myself, it is not possible to continue to leave the great global thermal plants in their current conditions and the modification to realize full cycles would cost too much. Alternative prototypes to thermal energy must be developed, based on interactive principles to save purification and energy processes. In fact, by changing the way of designing circulation pumps, autoclaves and turbines, we can extract energy directly from the environment as I have shown in subsequent inventions. Obviously, if you make this generous donation today to those who invent a system for capturing CO2 from the atmosphere, it is clear that you have noticed that the electric cars you produce are useless, on the contrary, they increase CO2 emissions even more, having to charge them with thermally produced electricity, even if the politicians who encourage them do not understand it. Besides, we cannot think of putting batteries on heavy means of transport, agricultural tractors, and small tools such as brush cutters, motor hoes that work in the countryside far from the charging points. So the invention of CO2 capture in an interactive way between water, air and limestone materials, is an important invention which, although it has never been realized, has paved the way for the undersigned to produce other even more

important inventions, which have led to the complete elimination of CO2 emissions also on the world means of transport by land, air, submarine and marine (**http://www.spawhe.eu/flying-and-floating-cars-with-interactive-global-linear-motors-and-thrust-of-newton-and-lorentz/, http://www.spawhe.eu/aerospace-and-submarine-transport-system-with-interactive-primary-and-inductive-linear-motors/, http://www.spawhe.eu/hydroelectric-power-auto-with-peripheral-torque-to-the-wheels/).** Probably, no one has informed you of these inventions, which have remained the virtual state because no one has financed them. I know well that, even if I had been informed, as an entrepreneur, you must above all defend the investments made, which unfortunately did not include interactive systems. I know very well that this type of reasoning is done by all the world entrepreneurs, with the consent of governments. But this way of thinking, in addition to leading to global warming, has also led to the current coronavirus pandemic, because nature has rebelled against large emissions of poisons, CO2 and steam. If we think objectively, the current energy and purification inventions not being interactive, are also uneconomical. In fact, with the interactive system the water and the air would purify each other by exploiting together the principles of Henry and Pascal, which do not require any absorption of energy paid for by users. If to these principles, we also add the exploitation of gravity and electromagnetism with the principles legislated by Maxwell, Lorentz, Faraday Tesla, it is possible to extract energy directly from the environment without paying any energy source and without producing any kind of pollution. (**http://www.spawhe.eu/compressed-air-is-much-more-powerful-practice-and-economic-of-hydrogen/**).I would be a hypocrite if I said I am not interested in winning the $ 100 million prize that you generously gave away. In the current situation, to continue producing fossil energy, I see no alternative to my solution of modifying the chimneys and purification plants to use CO2 in favor of the environment by alkalizing the water. However, I must be honest in saying that I would use this

money to demonstrate that energy can also be produced differently and with lower costs, compared to fossil energy and current renewables. I prefer to remain poor, in order not to give up my environmental and energy ideas, which I could not demonstrate precisely because no one offered me a loan. However, given your sensitivity to solving the problem of global warming with a large economic contribution, which I have never seen in governments and entrepreneurs, I would like to advise you to better observe nature, which does not have technology and artificial intelligence. Despite everything, in an immense universe full of nuclear explosions, he has created on Earth, a small oasis, devoid of lethal cosmic radiation, which produces food in abundance for everyone, exploiting only the interactive principles between the organic and inorganic elements existing on the planet For this, I believe that we must not change the earth system, but only enhance it locally to meet our energy, food and survival needs. All we have to do is increase the operating pressures and take advantage of the fluid dynamic and electromagnetic flows, at the temperature of the earth’s environment.

The silences that the whole world is maintaining on the interactive solutions that the undersigned is proposing only with intellectual patents, of public utility, accessible to all, regularly deposited, are an attack on the sustainable protection of the environment and human life. I, as a poor inventor, living only on a modest working pension with his family, have refused to spend money on legal claims against patents not granted and to pay maintenance fees for those granted, but not funded, especially by world public bodies, which would have a moral duty to experiment with them in the interest of all, in order to choose, if it is convenient to clean fossil energy well, or to replace them, not with current renewables, but with the most efficient interactive energies, which only collect silences. Instead the world governments have canceled the patents of the undersigned on the interactive cleaning of fossil energy, and keep silence on the

interactive energy, which could truly revolutionize energy and transport on land, sea space and strengthen human defenses with the artificial heart. energetically autonomous blood oxygenator, which without altering human DNA could extend human life by hundreds of years, with the help of technology and artificial intelligence. Io has never found public or private partners, but I would be honored to share my inventions also from a legal point of view with an enlightened entrepreneur who is encouraging environmental research with his own money by opening up to all inventors who have good ideas. While governments and the United Nations have been silent even though they manage the database of world patents and have received thirty open letters from the undersigned alone, to take responsibility for the trials of sustainable patents of public utility, or at least, to recognize intellectual property of inventions, separated from industrial property, so that the rights of the inventors do not lapse due to obscure plays of power.

The one-way trade of public patents to private individuals has created an intertwining of interests between public and multinational entities, which has completely cut out independent inventors, who deal with the environment, energy and health. They cannot afford legal recourse against low cultural patent examiners, pay filing and maintenance fees as if they were multinationals, and lawmakers do not understand that ownership on public utility issues must be separate from industrial property.

Intellectual property is essential for progress, because those who have no money but have experience sharpen their wits to create simple and economical solutions in the interest of all. In fact, if I’m right, both on interactive purification and on interactive energies, it will no longer be necessary to modify all the world’s chimneys but only that of large industrial thermal plants that cannot be eliminated (production of steel, bricks, calcium, incinerators). If energy costs nothing,

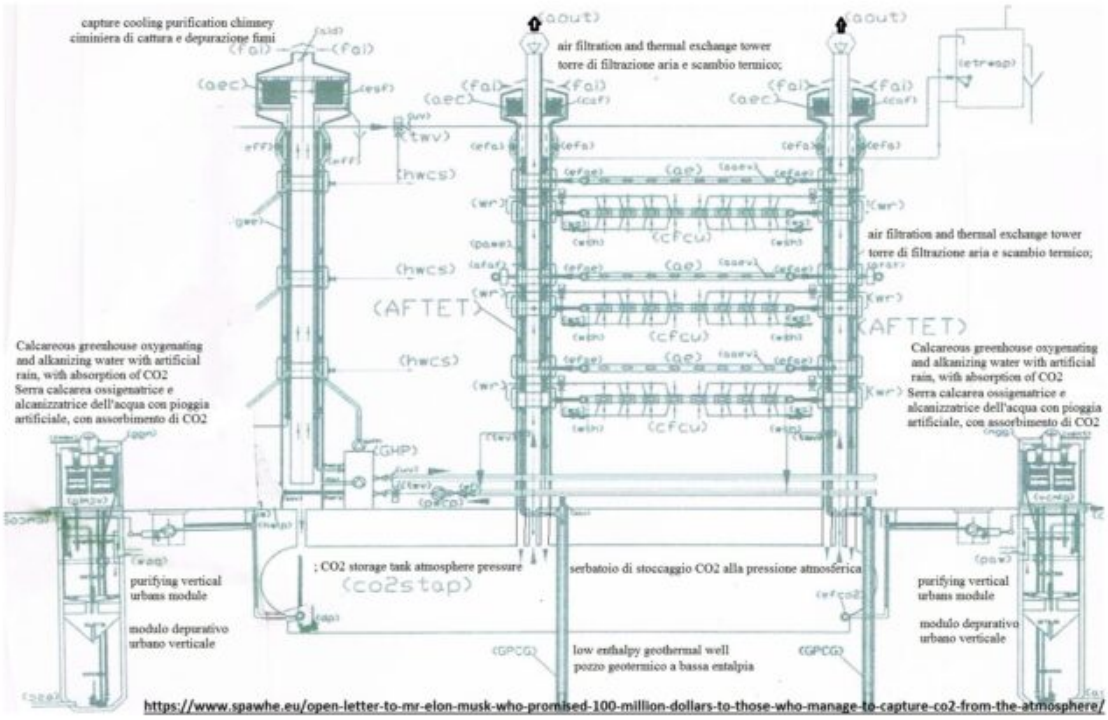
except the wear of the materials, because we will make better use of the gravitational force, we modify the pumps, turbines and autoclaves, all anthropogenic plants will become interactive, even without modifying the chimneys will equally reduce the percentage of CO2. present in the atmosphere. It will be enough to cover them and produce artificial rains in small and large limestone greenhouses that can be built everywhere with very low costs, purifying the environment and rapidly lowering the global CO2 level. As written above, this precious and man-friendly gas, being heavier than air, has been waiting for a century, in the lower layers of the atmosphere, waiting for these inventions to be used in favor of the environment. World public science, while silent on the modification of the chimney stacks and the limestone greenhouses, proposed by myself in 2012, has experimented without success the C.C.S. (Carbon Capture and storage). The various prototypes cost around fifty billion dollars; it was expected to cost $ 70-80 per tonne captured, excluding transportation and landfill costs; This system, which not use CO2 in favor of the environment, but against the environment, is based on the chemical washing of fuels; it involves an 11% higher fuel consumption in the case of methane and even 30% in the case of coal, in order to have the same power output. A possible release of poisonous clouds of CO2 could create the so-called Nyos effect (already occurred due to a seismic effect that released a natural CO2 accumulation in the subsoil): that is, the death of all living beings by asphyxiation in the area surrounding the escape of gas in high concentrations. We can no longer trust this well-paid science which, in addition to producing damage, also commits the crime of omission towards sustainable inventions, proposed by inventors like myself, which are based on direct knowledge of the functioning of industrial and acquired in a working life. First you need to experiment with interactive solutions, then compare them with the current ones, then choose the best ones, and only then invest, not nationally but globally. Today most of the anthropogenic plants have to be redone, but the

technologies are good. It doesn’t take much to make them interactive. World governments must incentivize these transformations, not continue to finance outdated industrial activities energetically and environmentally. It is no coincidence that even the human heart of sick or elderly people, like myself, must become interactive to integrate the functions of sick or aged organs. I am also willing to offer myself as a guinea pig, if brave governments and entrepreneurs finance this invention.

Best regards

Luigi Antonio Pezone.

Open letter to Mr. Elon Musk who promised 100 million dollars to those who manage to capture CO2 from the atmosphere. First part



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Dear Mr. Elon Musk, I hope to be able to participate in this competition too which, in 2012 I patented at national and international level the capture of CO2 at the exit of the chimneys, which I have virtually modified, creating an expansion chamber before the exit section, a double external chamber and a fan at the base of the chimney, to bring the CO2 back into the subsoil. As you know, being CO2 heavier than air, it would easily allow itself to be captured by the depression produced in the expansion chamber and we could use it to create artificial rains in small limestone greenhouses that oxygenate and alkalize the water to be purified. In this way we will anticipate the purification processes in the sewers that today only produce damage, producing hydrogen sulfide, ammonia nitrogen, sulfuric acid and producing carbonates useful for combating the acidification of rivers, lakes and oceans (http://www.spawhe.eu/capture-cooling-purification-chimneys-ccpc-international-patent-n-patent-wo2014-076724-and-subsequent-invention-air-filtration-and-thermal-exchange-tower-aftet/). My proposal was and is perfectly integrated into the natural cycle of anthropogenic carbon; but strangely, it has not been understood by the governments, scientists and energy and purification entrepreneurs of the world. The reason why thermal plants, steel mills, man-made incinerators are wrong is not because they emit CO2. This cannot be avoided with combustion processes. They are wrong because CO2 reaches the atmosphere undisturbed. The public and private designers of thermal systems have acknowledged that CO2 cannot be broken down by filtration, not even with electrostatic filters, since it is a non-polar molecule. They know well that the reaction CaO (s) + H2O (L) + CO2 (g) = Ca (HCO3) 2 (s) would be enough to break it down chemically, but unfortunately the production of calcium oxide (CAO) can only be done by heating the limestone rocks (CaCO3) at about 1000 degrees of temperature, this operation involves the emission of 1.57 kg of CO2 into the environment (CaO + CO2), only based on the molar weights of the components, in addition to the CO2 emissions emitted by the fuel used to produce heating. Therefore, this solution does not solve the problem of CO2 emissions. Therefore, even the ovens that produce the calcium oxide used in construction should be flanked by a limestone greenhouse, with artificial rains to produce hydrogen calcium carbonate Ca (HCO3) 2 at room temperature, which exists only in liquid solution. In the same way, even the blast furnaces, incinerators and thermal power stations should enter the fumes directly into the limestone greenhouses, or modify the chimneys, as proposed by the undersigned. Dear Elon Must, as a world successful inventor and entrepreneur, you should know that the first steps of the most important inventions in world history are the most difficult because they have to clash with existing inventions that dominate the world market even if they are scientifically wrong Although no government has financed this invention of world public utility, I have continued to work on the topic of global purification of the environment. Not having the political and economic power to modify all the smokestacks in the world and the public and private facilities behind them, I concentrated on subsequent inventions, which no government and no entrepreneur would have developed, not having the entire world ruling class wanted. modify the very simple chimneys. In fact, developing subsequent inventions, to economize interactive processes, interactive energies have also come out, which do not involve the emission of CO2 heat and not even steam which is equally a greenhouse gas. However, let's proceed step by step. As you well know, carbonates are not very soluble in water and therefore the purification process requires the circulation of a large amount of water which should have prevented competent designers from building the current large thermoelectric plants. Furthermore, the large circulation of water required would have required a large absorption of energy and consequently another large amount of CO2 emissions. 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If to these principles, we also add the exploitation of gravity and electromagnetism with the principles legislated by Maxwell, Lorentz, Faraday Tesla, it is possible to extract energy directly from the environment without paying any energy source and without producing any kind of pollution. (http://www.spawhe.eu/compressed-air-is-much-more-powerful-practice-and-economic-of-hydrogen/). Luigi Antonio Pezone.

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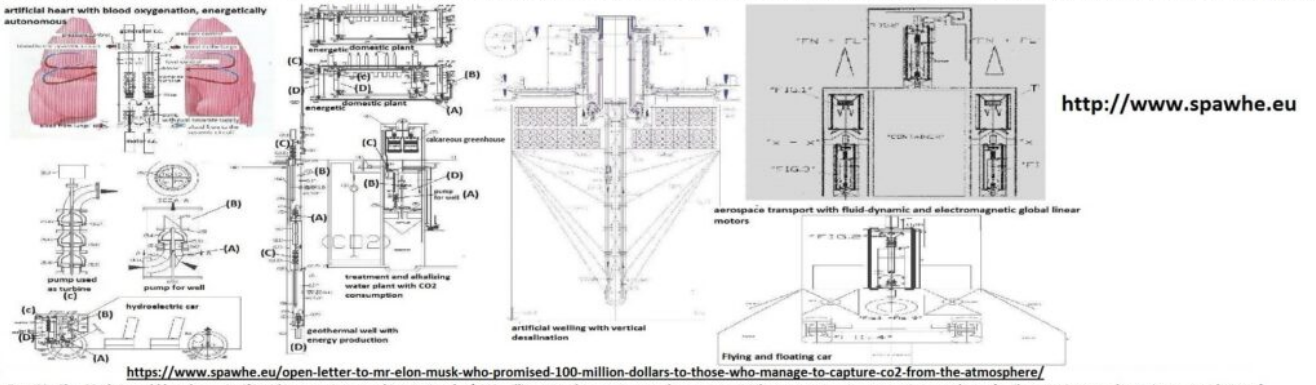

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I am also willing to offer myself as a guinea pig, if brave governments and entrepreneurs finance this invention. Best regards Luigi Antonio Pezone.

This article was published in Italian on July 28, 2011 in the Lexambiente magazine (https://lexambiente.it/materie/acque/183-dottrina183/7412-acque-depuratori-coperti.html). After almost ten years, I also translate it into English, because nothing has changed in environmental protection, attaching it to the article “Open letter to Mr. Elon Musk who promised 100 million dollars to those who manage to capture CO2 from the atmosphere” to continue the explanation that CO2 can only be neutralized by modifying the purifiers of water interactively with the capture of fumes.

Covered Purifiers.

The stalemate in environmental protection in the world requires new ideas and above all less hypocrisy on the part of the men who should carry them forward. Despite the international summits on the environment, which follow one another at the rate of two or three a year, and the commitments proclaimed, there is no progress. Even 2010 marked

the record for CO2 emissions into the atmosphere of 30.6 gigatonnes. It is not enough to produce cars and plants that emit less CO2 and not even the increase in alternative energy sources. We need plants that subtract CO2 from the environment as trees do; indeed better than the trees that give back most of it through the autumn and final rot. As much as I try to find out about proposals that go in this direction, in the world I see nothing better than covered purifiers that would allow you to purify water by consuming CO2 in a simple, economical and space-saving way compared to the current purification system; which, to know if it protects the environment, it is necessary to reckon well between the positive and negative effects it produces. Just think of the incoherence of the purification cycle which first degenerates the sewage in the sewers to septic and then purifies them, the spills of this sewage into the water bodies in case of excessive rains, the emissions of toxic and greenhouse gases produced by both sewer system and open air purifiers. All problems that can be solved with small covered purifiers upstream of the sewers and large purifiers downstream of the same, perhaps interspersed with sewage settlers, which would divide the purification tasks leaving the sewers with the task of transporting purified and rainwater. How it should be. However, the silence of the scientific and environmental world on covered purifiers is becoming ridiculous as well as planetary. It would not take long for authoritative personalities, who are pleased to provide advice to the ministries of the environment around the world, to explain to myself that he has made a technical and scientific mistake, if this is their authoritative opinion. But above all these characters should clarify our ideas on how things must work in the environmental world. We must continue with the technology used inappropriately (in this case they must explain how the current purification techniques can be used to heal water bodies, oceans and the atmosphere), or recognize the planetary technological blunder and, finally, move towards the plant simplicity of covered purifiers. Despite the simplicity it was

very difficult to complete the path that led to the conception of these purifiersI say at conception, not at birth, because to be born they would have needed the experimentation of the basic components, designed for sewage purification, which in Italy no one wanted to experiment. Equally, I have no doubts, because simplicity never fails, but I certainly do not have to thank the scientific world, the institutional bodies set up to protect the environment, let alone the manufacturers of environmental machines and systems and not even the managers. I shouldn’t be saying that covered purifiers could become the most important environmental invention of all time, but I’m saying it anyway to challenge the hypocrisy that reigns supreme in the environmental world. As an installer of environmental plants (in Italy and abroad) I have seen the degeneration of sewage in the sewer routes grow and I have always considered it the limiting factor of the efficiency and sustainability of the current purification system. I always thought that great inventions would have been those that would have allowed anyone who proposed it to preserve the freshness of the sewage along the sewer routes. As a retiree, I devoted myself almost full time to solving this problem. IF it is true that it is equally possible to purify, it is also true that the necessary processes involve high energy and additive consumption, complex and expensive plants, large CO2 emissions; in short, an enormous waste of resources that we cannot afford. In the world there is no systematic design of public utility systems, above the parties, which public bodies such as the UN and, at national level, CNR, ENEA, ISPRA, etc. should carry out. In these bodies, in addition to researchers, there should also be designers who are experts in environmental plant solutions. Le scelte e le soluzioni impiantistiche ambientali sono strategiche per la salute dei cittadini e per la qualità della vita, non possono dipendere dagli interessi che portano avanti le società private. Queste condensano le loro capacità tecnologiche in macchine e impianti circoscritti a specifiche applicazioni, mentre la politica ambientale riguarda tutto il territorio. Alcuni

problemi, di esclusiva competenza delle pubbliche autorità, pur essendo strategici, a volte, non vengono risolti e generano maggiore attività in altri settori che possono avere uno sviluppo anomalo, difficile da ridimensionare, se, improvvisamente, si risolve il problema a monte. Among these unsolved, apparently unsolvable problems, there is precisely the degeneration of the sewer. No contractor has wasted resources on improved water in the sewer system. He is not required to do this. Public environmental authorities should take care of it, but all attention is focused on purifiers. The worse the quality of the sewage to be purified, the better the business within the purifiers. Over the last twenty years, purifiers have made exceptional progress. They are equipped with perfect ultrafiltrations, bioreactors, digesters and dehydrators. They have become saturated with machines and systems but treat less and less water; they produce sludge to be incinerated; they emit CO2 and all other greenhouse gases. I have already written in other articles that we should reserve this technology for purification and desalination, where it is necessary, and return to greater plant simplicity for purification because today these can and must be combined with the fight against global warming, in particular with sustainable consumption of CO2.

If public clients were more prudent and above the parties there would be greater environmental prevention, the purification solutions would be different, more sustainable and in the general interest. The sewage sector in which I intervened is considered unappetizing by entrepreneurs, unknown to researchers, neglected even by the texts that speak of purification. The latter generally recommend short routes, while the world goes towards megalopolises of 25 million inhabitants in front of which the present Rome, which also has a sewer network of 3500 km, will be considered a small town. Historically, urban planners struggle between single and double sewer systems, which does not affect the true nature of the problems (read the article by the undersigned:

Purification in homes and sewers). What happens in the sewers is very serious. Sludge is produced in the worst possible way: by mixing urban, rain and industrial sewage in an anoxic environment, with frequent stagnations that acidify water and sediments producing hydrogen sulphide, sulfuric acid, NH3, NOx, SOx, CO, CO2, CH4. Intractable, septic, toxic and foul-smelling sewage arrives at the purifiers whose purification, according to the mistreatment suffered (directly proportional to the length of the paths), involves at least the tripling of purification costs with enormous energy consumption and additives to return oxygen to the sewage lost, to oxidize what little is left of the organic material, to fight acidity. By treating septic sewage they emit bad odors and must be removed from the cities, increasing the routes and septicity even more. Sometimes they cover up and equip themselves with deodorization systems that do not purify the air but only mask odors with chemicals (see art. Purifiers do not produce bad odors). It is not true that biological purification does not work properly because it is poor in organic matter, as many commonly assert. Much of the organic matter is destroyed before reaching the purifiers. It can be said that the sewage system feeds the technology in the purifiers. In some articles on lexambiente I proposed in vain to study sewage purification solutions (The deficiencies of purification systems, The prevention of hydrogen sulphide). I also proposed a physical-chemical drainage system illustrated in particular in an article: “Flocculation at home”. But the right ideas came later, when I began to study authentic sewage purification solutions. Having to stay under the street level, I could not help but develop solutions in depth; having the need to extract the sludge from the subsoil, I chose a space-saving system that overlaps the underlying purification treatment. In this way, autonomous vertical purification modules were born and I realized that they could be placed side by side without interruption in parallel and in series to treat, respectively, greater flow rates and greater organic loads. In addition, the flanking allowed the passage of air from one sector to another

with the possibility of capturing the emissions and recirculating them in the water, to reduce the atmospheric emissions that currently emanate from purifiers. To increase the possibility of gas consumption, photosynthesis has been included in these purifiers in addition to the nitrification and alkalinization processes. In this way (at least on paper) the covered purifiers were born which, for the first time could allow the design of purification systems with a logical and complete sequence of environmental protection: 1) In the vertical purification modules, separate the sedimentable substances, purify the water and separate the air from the CO2; 2) capture and conveyance of combustion fumes and smog into new sewage collectors with separation and compression of the heavy CO2 mixture to feed the oxidation basins of the purification modules and final purifiers. 3) extraction, dewatering and stabilization of local sludge; 4) Conveyance and transport of rainwater and purified water into the sewer (without sewer degeneration and without damage from spills) to the final fluvial, lake and marine purifiers: 5) purification and final alkalinization of the water, with further consumption of CO2; 6) extraction, dewatering and stabilization of sludge from final purifiers This would be the correct way to proceed with purification if the main objective was total protection of the environment. Contrary to what it may seem, for the same quantity of treated water, the cost of purification would be much cheaper than current purifiers, as it does not require energy waste and expensive machinery. With this system it is possible to clean up the water and air (fumes and smog) of individual homes or entire cities, or lakes and coasts with shallow and deep waters. Although there are currently no simple and inexpensive environmental protection systems that are so versatile, this design criterion is ignored (or silently opposed) by private companies producing purification machines (which are not needed). This is why I speak of superfluous technology. But it is very serious that it is also ignored by public institutions, municipal, provincial, regional, national and

even international (considering that not even the Italian "global point" of the IPCC, "he replies) which should protect the health of citizens, the environment and the economy and which instead allowed the worldwide growth of this false and almost useless technology. In an open letter to the Minister of the Environment, published on December 1, 2009 in "Affari Italiani", entitled "Projects and ideas for 2015", I proposed to start purification from the sewers. Of course I was ignored. But the path of sewer purification was the right one, the one that led me to the conception of covered purifiers. But even the covered purifiers were ignored. To convince the skeptics, I studied and proposed new purification applications that were previously unthinkable, as well as sewage, urban, river, lake, coastal, port and above all, large coastal water purification plants designed specifically to remove CO2 from the environment and acidity from the oceans. Equally ignored. It is not clear what is the real objective of public bodies and institutions that should side with the sustainable and instead would like to pass for sustainable solutions such as the C.C.S (Carbon Capture and Sequestraction). I refer to international organizations such as I.P.C, C. (Intergovernmental Panel on Climate Change) even awarded the Nobel Prize for the environment in 2007 together with AL Gore and our CNR, ENEA ENEL who work for the CCS and are silent on global purification. In this regard, read the article "The C.C.S. useless, expensive, harmful. Better global purification "available on the net and on my Facebook page. But let's see what are the main innovations that simplify the processes in covered purifiers:

a) the vertical introduction, above the old Imhoff pits, of oxy-nitrification and photosynthesis basins, stopping with these sections under the road level so that aerobic purification processes can also be inserted in the cities and in a very small space.

b) the overlap, starting from the road surface, of a compact

(not cumbersome) system of dewatering and chemical stabilization of the sludge, based on the division of the flow rate of the sewage and calcium oxide powders into air turbulences that cause the precipitation of the sludge in hundreds of air pressurized draining bags. This system takes up very little space and has nothing to do with the current dehydration in draining bags. In each bag the slurry flow rate is reduced to the minimum possible (about 5 liters / minute) and the calcium oxide flow rate in about 0.5 kg / m3 of air. The turbulence created by the water and air diffusion system induces an intimate contact between the water particles and the calcium oxide powders which precipitate in the form of calcium carbonate, also dragging the suspended solids with very long contact times and amalgamation after precipitation (due to the hundreds of bags in simultaneous filling). While the drain water rushes into the settler and the filtered air comes out of the bags. This system, which with very low costs will make it possible to obtain a high quality sludge, has also been planned to be mounted on a truck to be used in cities and in areas with low environmental impact (where the above-ground section will not be shown).

However, after the publication of the Italian patent Vertical synergic building No. 0001419313 of 19.11. 2012 transformed into International patent N. WO2014 / 076727, I have no longer talked about this solution (deleted) because as I explained, the production of one kg of calcium oxide involves the emission of about two kg of CO2, including CO2 emissions to heat the limestone material. It is much better to extract calcium cold from the limestone material with artificial rain in covered and closed environments, also with the help of CO2, which produces carbonic acid in water than a weak acid with a pH of 5.25 according to the balance:

CO2 (aq) + H2O ⇌ H2CO3 (aq) whose constant is 1.7 10-3

Carbonic acid is a diprotic acid and the first dissociation equilibrium is:

H2CO3 (aq) ⇌ HCO3– (aq) + H + for which Ka1 = 2.5 10-4

These simple innovations (a – b) will allow to revolutionize the current purification systems and to start the real environmental protection in the world that has never begun.

At the local level we could have autonomous purification modules that with very little space in the plant allow to obtain a complete purification up to stabilized sludge.

At the level of large purifiers, with the series composition of the modules in a single step, we could treat any organic load; with the composition in parallel any flow. The seamless arrangement of the (square) modules in longitudinal and transverse direction and the verticality of the processes make it possible not to waste even a m3 of space and to be able to recirculate the air that comes out of the basins, rich in CO2 and other gases in the process greenhouse, which are neutralized in the processes of oxidation, nitrification, photosynthesis and alkalinization. By controlling the parameters: PH, dissolved oxygen and CO2 concentration, intervening with the administration of milk of calcium when the PH is lowered and compressing the excess CO2 in the network and pressurized tanks (to consume them later when the load conditions vary or to transfer it to other plants). The covered purifiers can be composed in various layouts and sections according to the loads of the flow rates and the place where the systems are built. Dwelling on the more compact version that has more marked purifying functions, we can say that the sewage to be treated is introduced directly into the settler, the sedimentable parts fall back into the digester while the water rises upwards where it is oxidized and nitrified. But to escape from the basin it must pass under a separation wall and go up to the overflow level located a couple of meters higher. This involves the creation of a stagnant area above the oxidation in which the gases that come from below circulate and stagnate on the surface due to the cover. The ideal conditions are created to cultivate a

phytoplankton in the greenhouse which, once its life cycle is over, precipitates into the sedimenter and from these into the digester. Consequently, zooplanktonic and benthic microorganisms will also develop in these plants. Considering the flow of water we will have:

1-An area of □□normal water circulation (sedimentation + oxy-nitrification), sized with an upward speed of about 1.0 m / h with a variable height based on residence times. In this area, for the purposes of CO2 reduction, the nitrification action from ammonia nitrogen to nitric by nitrosomonas bacteria will mainly count which can be represented by: 55NH4 + 5CO2 + 76O2 □ C5H7NO2 + 54NO2 + 52H2O + 109 H and oxidation of nitrite to nitrate by nitrobacter bacteria: 400NO2 + 5CO2 + NH4 + 195O2 + 2H2 □ C5H7NO2 + 400NO3 + H. Methane, produced by digestion, having to pass through an oxidized zone will be transformed into CO2 (CH4 + 2 O2 = CO2 + 2 H2O). Hydrogen sulphide, transformed into sulfur dioxide and subsequently can undergo all subsequent processes, up to neutralization as calcium sulfate: SO2 + H2O → H2SO3 (sulphurous acid); CaCO3 + H2SO3 → CaSO3 + CO2 H2O H2SO3 + Ca (OH) 2 –> CaSO3 (calcium sulphite) + 2H2O. In the presence of oxygen and water in gases, the calcium sulphite reacts in part with them producing hydrated calcium sulphate (ie gypsum): CaSO3 + (1/2) O2 + 2H2O → CaSO4 · 2H2O; C2-2)

2-A lower stagnant zone characterized by cold anaerobic digestion with very slow processes, in which the maintenance of the environment in the moderately alkaline range will mainly count to ensure the best performance of the process: 2 H2CO3 + Ca (OH) 2□CA (HCO3) 2 + 2H2O. From this area the gases CH4, SOx, NOx will develop and will be neutralized in the upper areas.

3-An upper aerobic stagnant zone where phytoplankton is grown with photosynthesis that consumes nutrients and CO2: The chemical equation that summarizes the process is: 6 CO2 + 6 H2O + 2872144.8 (j / mole) □ C6H12O6) + 6 O2; 2872144.8 (j /

mole) = 686 (Kcal / mole). The cycle of growth and death of the organisms present in the phytoplankton lasts about fifteen days and in the end the dead cells precipitate on the sloping bottom of the basin where there are the air diffusers that will oxidize the organic matter produced together with that already contained in the sewage. The creation of this area, which does not exist in current purifiers, will allow us to consume CO2 for 24 hours a day and 365 days a year. It will also allow us to keep the bacteria necessary for purification alive even in the absence of organic loads.

4- a covered and illuminated area (naturally or artificially) above the water mirror in which the gases that must be consumed in the process are concentrated. The nitrogen that is lighter and more neutral, through the vents placed in this area, can rise back to the atmosphere.

In the modules used in urban systems, the lower speed of sectors 2 and 3 is very useful because it allows the gases produced to be consumed slowly with a certain ease. In large marine purifiers that will be used above all to consume CO2, without organic loads, large o.n.f. basins will be created. alongside the settlers.

In October 2010 I published an article on Lexambiente entitled Projects and ideas for the next summit in Cancun in which I proposed to those who would go to Cancun to start talking about global purification. Knowing that they would not have talked about it shortly after, I published ironically: In Cancun there will be no talk of global purification. After the summit, the series dedicated to Cancun closed with a laconic article: There was no talk of global purification in Cancun. How could we talk about it if, after another eight months from the conclusion of the summit, it is still not discussed in Italy? Nobody even has the courage to comment on the global purification which proposes the return to the revised and corrected plant simplicity (it was Imhoff, with oxidation, photosynthesis and limestone greenhouses, for the consumption

of CO2), but extended throughout the territory. Probably not even in Durban, in December of this year, they will talk about it. The silence on these systems, which has hitherto prevented their experimentation, does not honor the obscurantists because, as I have already written, the covered purification was born step by step ON-LINE under the eyes of all and everyone has had and have the chance to criticize it. If I am right, and I believe I am right, the silent majority does not gain from either a moral or a professional point of view. This story demonstrates how important the Internet and the people of Facebook are today for democracy and for exposing the irrationalities of rulers and the damage that private interests in the public sector can bring. If it is true that private capital is necessary for environmental protection and management, it is also true that strategic choices must be in public hands, to be directly controlled by citizens. Unfortunately, in Italy and probably also abroad, the public control bodies are patronizing political bandwagon that don't work. What to do? I have the famous American environmental writer Lester Russel Brown answer in my place: "When people ask me 'What can I do? They usually expect my answer to be: 'Recycle your newspapers, change your bulbs for more efficient etc. ". But the most important thing that we as individuals can do is to become politically active, to commit ourselves so that the current trends of environmental destruction and population growth, which undermine our future, are forced to stop. " controllers of controllers, not in a climate of witch hunts but in an atmosphere of free circulation of news. Thanks to the Internet, Facebook, twitter, etc. anyone of us can become in his little writer, journalist, if he has something to communicate, he believes he is right and is not afraid of confrontation with different opinions. Scandalous environmental managements such as those of the five Campania purifiers of the regi trations regularized for eight years by monthly reports conniving a control commission of as many as 25 people must no longer happen. With transparent management of the environment and suitable systems, all CO2 emissions

could be eliminated and the oceans recovered from the acidification process without resorting to cutting-edge technology.

Thanks to Facebook we won the referendum against the privatization of water but no one will be able to save us from the transversal, bureaucratic and, in many cases corrupt, ruling class that governs the environment, the country, and of course, even water. However, it was important to win that battle even if it seems we are at square one. It was important that the people of Facebook began to make themselves heard in Italy too. It is important that our politicians understand that Italians are not interested in mega-works such as the tunnel of the Val di Susa and the bridge over the Strait of Messina but the works that can improve the quality of life, water, air and create opportunities. stable, not occasional work. Global purification can improve the quality of life in isolated homes, cities, lakes, rivers and seas, creating many job opportunities in the construction, electromechanical, management and tourism sectors. An entirely breathable Italy could create the wealth necessary for major works, if necessary.

I am biased, and I certainly exaggerate in saying that global purification is the biggest environmental invention of all time, but equally certainly, it cannot be treated as the invention of hot water by those who waste public resources without showing professionalism. in the management and design of environmental protection systems.

Until a few years ago, without the Internet, global purification would have been covered up without anyone ever having heard of it. Today, I realized that by typing in "Google" Luigi Antonio "Pezone also appears (on the tenth page). It's not the popularity I'm looking for. But it is important because it means that global purification is alive and can still grow in spite of the castes that govern the environment. If they are roses they will bloom. But this

possibility will not be due to the validity of the projects but to the scarecrow of being pilloried on the Facebook pages. Obviously it is a long journey and difficult, but possible. The caste has not yet understood that it cannot behave with the arrogance of the past, it must give answers to complaints of waste and the answers must be convincing. If, as in the specific case, together with the complaints there are also detailed projects with silence, the whole institutional framework loses face, considering that Italy is divided into regions, provinces and municipalities, nobody is saved. Especially on the problems concerning global warming, the international mobilization of Facebook is necessary because the good intentions of scientists, writers, environmentalists, who fight for reforestation, the preservation of natural reserves, the protection of plant, animal and fish species collide with the increase of the population up to over 9 billion between the 40s and 50s, which require more space for men and their activities. Therefore, we must not have too many illusions. As we are finding that CO2 is increasing rather than decreasing, in a few years we will find that forests and reserves will decrease rather than increase. There is less talk of ocean acidification but it is an even more serious phenomenon, which in addition to being directly linked to CO2 also depends on water pollution. If the top management of the environment does not come up with something new, we must acknowledge that there are two different ways of protecting the environment, one of which is the current one, which costs a lot, treats very little water, taking one step back and one forward (the sewers degenerate and purifiers purify) produces CO2 emissions and, in any case, cannot be extended to protect the air of cities, water bodies, coasts. To this system should be added the CCS system, which is dangerous, unsustainable. The other, more effective, concrete and sustainable way that could be planetary is precisely the covered purifiers. But the world castes that have already planned gold deals continuing the current waste to which they will add the C.C.S. they don’t want this confrontation. For the moment they ignore the

covered purifiers. If they do not die of loneliness they will technically attack them. We still don’t know how. Probably, having prevented the experimentation, they will say that the system does not work, but the advantages of the covered purifiers are too many not to mobilize and carry out all the tests necessary for the development. Among the many things they could do we think of the vertical purification modules in poor countries, without sewage systems, which will be able to build the sewers at a later stage or even do without them .. Even in Italy there are still 18 million people not connected to the sewers. Over 80% of the world population needs a sustainable and complete purification.

In a POST dated 23-04-2011 from the “Climalteranti.it” website entitled “Nuclear energy is not essential”, in which I spoke about covered purifiers, someone hypothesized a conceptual bug in this system that is too simple to be true. I answered in this way: “Today there are sewage systems that degenerate the sewage and dump it, untreated, into the water bodies, and purifiers that are forced to treat these degenerated sewage with enormous energy waste. They deal with very small flow rates and have never worried about either acidification or atmospheric emissions that they themselves produce. These are huge bugs (which nobody cares about). Covered purifiers do not require purification machines, with the same flow rates treated, they consume a tenth of the energy, they occupy a tenth of the space, they can treat hundreds of cubic meters / sec, they are based on sustainable processes. “The truth is that the covered purifiers affect too many economic interests and in the face of these interests, global warming takes second place. From the very beginning, when I did not know how far I would go, I chose to publish my modest work ONLINE so that it could at least serve as an idea for those who, one day, had the intention of continuing to work on the problems I reported. I did not think that from sewer purification, you could get to a global purification system. When the ideas arrived, I chose to continue the ON-LINE design because I knew

that none of the “experts” would listen to me, regardless of the value of the proposals (I had already unnecessarily proposed structural water saving with standard components in the context of individual apartments).

At the last summit of the World Future Energy Summit in Abu Dhabi there were twenty-four thousand people, 148 countries, 100 official delegations. As many will have been to Cancun. Is it possible that all these people focus only on energy problems looking for the phantom clean energy and no one is concerned about better protecting the environment from current pollution? Is it possible that no one has noticed that current purifiers emit CO2 into the atmosphere almost like thermal power plants? That water pollution contributes to air pollution and vice versa? Natural self-purification also creates precipitation in the seabed and CO2 and methane emissions. Very simple environmental protection systems are required, but which simultaneously involve water and air. The CO2 in the air is unassailable while in the water it turns into carbonic acid and can be neutralized. We plan urban and industrial settlements in the territories that allow the installation of covered purification modules and purifiers, with the related networks for capturing and conveying the fumes and water to be treated. In cities, large quantities of water are not required, but adequate covered aerobic basins for the consumption of CO2 in which the water can be recirculated together with that to be purified. At the last summit of the World Future Energy Summit in Abu Dhabi there were twenty-four thousand people, 148 countries, 100 official delegations. As many will have been to Cancun. Is it possible that all these people focus only on energy problems looking for the phantom clean energy and no one is concerned about better protecting the environment from current pollution? Is it possible that no one has noticed that current purifiers emit CO2 into the atmosphere almost like thermal power plants? That water pollution contributes to air pollution and vice versa? Natural self-purification also creates precipitation in

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I want to summarize once again, for those readers who follow the story of global purification, some aspects that highlight the simplicity of the plant:

1) Global purification would be simple conceived as autonomous vertical purification modules, modular in series and in parallel to purify high and low organic loads.

2) Global purification would be simple conceived as large covered basins (flanked by vertical sedimentation modules for the extraction of sludge) to consume large quantities of CO2 and unwanted nutrients in the water in lake, river, port and coastal marine waters.

3) It would be simple and logical to use the current sewage systems for the circulation of purified and rainwater preceded upstream by urban and industrial vertical purification modules and followed downstream by covered river lake marine purifiers with low organic load, directly immersed in the body's waters water, protecting them from sediments, and if necessary, capable of treating the same waters of the water body to reduce ammonia nitrogen, increase oxygen, fight eutrophication, reduce acidity by consuming the CO2 present in the water. All this by simplifying the processes, not complicating them, but avoiding waste, fumes and damage from spills due to sewer degeneration.

4) The introduction of photosynthesis in purifiers would have been simple, sensible and logical, yet it has not been done: it is the most complete of the processes invented by nature, completely free and does not require machinery. To insert it, simply deepen the oxidation-nitrification basins with clarified water and create a surface barrier at the exit, for a height of about 1.5m. Who has not done so does not say that it would have slowed down the processes, because the insertion would be in parallel, not in series, involving only the circulation of gases. Phytoplankton would be grown which consumes nutrients and CO2. The precipitation of organic material would ensure the bacterial life necessary for purification processes even in the absence of organic loads. The coverage of the basins would allow the recovery and recirculation of gases in the water and the greenhouse effect would increase the productive yield of the plankton. Oxidized waters would normally skim below plankton.

5) It is a serious mistake on the part of current purifiers to

have neglected the neutralization of the gases produced, including CO2, instead of emitting it into the atmosphere, forgetting its environmental protection function. Furthermore, the CO2 stratifies on the surface of the oxidation basins. The capture and introduction of gas into the basin would have increased the efficiency both by providing inorganic carbon and by providing oxygen in a higher percentage than that contained in the air. The processes for consuming CO2 are always the same: nitrification, photosynthesis, alkalinization.

6) There is nothing more wrong on the part of legislators to allow purifiers to discharge purified, but not alkalized at the value of the receiving water body. The simple impact between waters with different alkalinity releases CO2 into the atmosphere. What are the summits on the environment, and in particular those on global warming, if these basic rules are not imposed on purifiers?

7) It would be simple to use single and invisible vertical purification modules in city streets to purify waste water preceding sewer degeneration, producing sludge of safe biological origin that can be used in agriculture. Unlike the old Imhoff pits, the upper layers of the modules, characterized by aerobic processes (oxy-nitrification photosynthesis), would not produce bad odors.

8) There will be nothing more sensible than the transfer of the wet fraction of municipal solid waste (80% water) to the vertical purification modules, when they exist, to extract the digested sludge, reduced in volume by 500%, extracted every 120-150 days, rather than daily through smelly bins.

9) There will be nothing more sensible than the use, for the extraction of sludge from the purification modules of small trucks equipped as purge tankers but which will extract only small quantities of mud without zeroing the purification processes as the current tankers do by extracting all sewage

and all bacteria. These new trucks will return the waste water to the purification modules, dehydrating, stabilizing and bagging the sludge directly.

10) There is nothing more foolish than continuing to purge the Imhoff-type sewage pits with tankers, bringing all the contents to the purifiers for treatment, destroying the methane-digesting decomposing bacteria and transporting barely a kg of sludge in 5 m3 of sewage. The biological sludge of the pits if they were dehydrated separately, as would happen in the proposal of the undersigned, could be used in agriculture. Instead treated in purifiers are contaminated and end up in incinerators. All with enormous transport and handling costs. There are also huge emissions from burning sludge that could be a resource. We could at least anticipate the experimentation of trucks with built-in dehydration but the entrepreneurs of the sector do not want to know. For the environmental authorities the problem does not exist; research institutions think of other things, universities do the same.

11) Instead of the double sewage system for sewage, which is useless, with the global purification system, it would be quite simple, in relation to the environmental benefits that would derive from it, the creation of a sewer network for the capture of CO2 and smog (heavy and non-explosive gases) to neutralize them in global purification modules and in covered basins inside and outside the city. All as described in a long report with drawings entitled “Global purification in cities.”

12) It would be quite simple, in relation to the environmental benefits that would derive from it, to combine a thermal power plant or an incinerator with a large covered basin, combined with a limestone greenhouse to neutralize the CO2 contained in the fumes before it is emitted into the atmosphere.

13) There is nothing more foolish than the current sewage systems that by mixing urban, rain and industrial sewage in an anoxic environment, with frequent stagnations that acidify

water and sediments, produce hydrogen sulphide, sulfuric acid, and greenhouse gases, make septic and toxic sewage and sludge, triple or quadruple the costs of purification.

14) There is nothing more complicated and expensive than the treatment of septic sewage and the activation of necrotized substances that the current purifiers are forced to do due to the sewage system that precedes them. With single or double sewerage the problem does not change without introducing sewer purification.

15) There is nothing more wrong and more expensive than the process of CO2 capture and sequestration through pre and post combustion which involve a greater consumption of fuels and a greater production of CO2 with the ephemeral advantage of hiding CO2 in the cavities terrestrial creating other dangers. See Nyos effect on wikipedia.

16) There would be nothing more logical and sensible than the creation of large covered basins in coastal areas, directly into the water, where rivers flow, to reduce the impact between fresh and salt water that releases CO2, to provide alkalinity to the waters , consume nutrients and CO2 by fighting eutrophication and ocean acidification. If we consider that all the CO2 subtraction operations we do in the water (nitrification photosynthesis alkalinization), contrary to those done in other environments, directly contrast the logarithmic curve of PH variation, it means that with this method we have a yield exponential in the fight against water and air pollution by CO2. This is demonstrated by the Henderson and Hasselbach equation which takes into account the ratio between the quantities of bicarbonate ions (derived from carbonate salts) and the carbonic acid present in the water: $pH = Ka + Log [HCO3^-] / [H2CO3]$ where the Ka constant of the carbonic acid is worth 4.3 • 10-7 mol / L is worth 6.37. Carbonic acid, consisting of CO2 + H2O, exists only in water and can only be neutralized in water. While the CO2 in the air is inert and cannot be neutralized. These works can also be

carried out on the coasts and subsequently connected to the sea to reduce costs.

17) There is nothing simpler and more logical than covering large areas with O.N.F. with transparent solar panels and treatment buildings with normal panels so that the environmental protection systems are not only energetically autonomous, but become producers of clean energy, instead of taking away arable land from agriculture. (However, with the subsequent inventions of the undersigned, we can produce energy at lower costs with compressed hydroelectricity that also oxygenates the water, which is another invention of the undersigned, boycotted worldwide)

18) There is nothing more sensible than using these works on the sea, even as port works, for the docking of ships as illustrated in some drawings of Lay-out. With the same public investments, works useful for economic development and environmental protection and energy production would be carried out.

19) There is nothing more sensible than the construction of covered purifiers completely underground in areas of particular landscape value. In these plants, as illustrated in some drawings, the sludge extraction would take place with the same trucks equipped for dewatering that would be used in the cities, mentioned in the previous positions.

20) There is nothing more wrong than the international CO2 quota market. Environmental protection is not a commercial matter but a technical problem that requires technical solutions

21) There is nothing more sensible and useful than global protection that can accompany demographic and industrial growth by combining purification facilities with urban and industrial ones without major environmental impacts for the containment of global warming. The purification plant would be

born together with the urban or industrial settlement. The incinerator or thermal power plant should not be installed where there will not be enough water to neutralize the CO2.

22) There is nothing more logical and sensible than making future covered purifiers work, always and in any case, even without hydraulic and organic loads. If they do not purify the sewage, they will recirculate the air in the basins of endogenous oxidation and photosynthesis to consume CO2, through photosynthesis, nitrification, alkalinization of the water. Current purifiers do not consume CO2 but produce it and emit it into the atmosphere

23) There is nothing that can allow for employment development and sustainable growth such as the capillary management of the environment allowed by global purification. The spread of unemployment all over the planet is scandalous while there is so much to do just to build and manage environmental protection from scratch. What has been done must be completely redone, in some cases integrated and modified.

The list could go on, but the covered purifiers are an antechamber on the Internet waiting for someone to consider them. The conditioned factor in the sizing of future purification plants will not be the bod or the cod but the amount of CO2 to be subtracted from the environment. This means that we will have covered treatment basins that are large in size with respect to polluting loads. By subtracting CO2 from the water, we will also eliminate the bod and cod from the polluted water that will be introduced into it. By a strange case, the current purifiers emit CO2, they do not steal it from the environment, so they won’t be needed. From an empirical calculation made in a previous article, I estimated that we should treat about 70 times the water we currently treat. On the other hand, the reduction of CO2 will not be virtual as it is now but will affect the entire current annual surplus of 15 GT. The waters of the entire planet will benefit above all from the treatment. In nature, everything is

connected. With the global purification we can artificially reinforce and restore the carbon cycle through the covered purifiers. The sludge produced in large part would be used in agriculture. In addition to being reinforced, the carbon cycle would also be shortened. Those who continue to remain silent on global purification (scientists, university professors, the world ruling class and professionals, false environmentalists) and would like to control the pollution of the planet by closing themselves in purifiers: they do not notice that the purifiers, the machines that contain and the sewer system that precedes them have become a ball and chain of true environmental protection. Probably when the game (voluntary or involuntary) of neglecting the sewage sector to increase business in the purification sector began, no one thought that lifting the lid could bring out the covered purifiers. However it turned out, the game lasted too long and huge resources were wasted, as well as doing environmental damage. Those who have not participated in this game, distance themselves, it is better to pass for distracted than colluding. The many insiders in the world, probably millions of people, could be distracted before the covered purification modules were invented. Today, with the development of this system it could be possible to anticipate sewer degeneration. Those who choose to continue wasting resources in sewer degeneration and to emit CO2 into the environment through uncovered purifiers when it is possible to avoid it in the state of the art (but it is also economical and convenient) can be reported for voluntary environmental disaster and economic damage. The congressmen who will go to Durban, do not do like those who went to Cancun even if they are the same. If they do not share projects based on covered purification, they present and discuss equally concrete and documented projects of universal applications. Stop talking about the quota market and generic reductions that cannot be achieved without projects. Unlike the C.C.S., wanted by the oil companies and the I.P.C.C., designed by the most important research centers in the world which has cost, up to now, about 30 billion dollars just for prototypes and

surveys; the global purification has no sponsors or clients, it has not cost a single euro to any country in the world. In a way, it reminds one who was born in a manger to save the world.

Environmental protection on the solid waste front is equally ambiguous. In landfills, unseparated moisture produces leachate and other harmful emissions into the atmosphere; RDF plants (fuels derived from waste), do not comply with the component selection procedures, also pack organic and wet waste that produce leachate in the so-called eco bales which, burned in incinerators, add dioxin to the already harmful mixture of fumes (NOx, SOx, CO, CO2). Also in this case, if an incinerator is not randomly placed on the territory but combined with a covered water purifier, the purified combustion fumes can be cooled in the basin and introduced into the covering greenhouses from where the CO2 would be recovered and neutralized in the waterCurrently it seems that, overall, purifiers and incinerators have been specifically designed to damage the environment and compensate each other to create greater environmental damage. The damage that does not complete the sewage system is completed by the open tanks of the purifiers and those that do not complete the landfills and RDF are completed by the incinerators. The current environmental policy is bankruptcy! In this respect, Campania is the most devastated region in Italy. The “garbage” is world famous and the purifiers perennially seized by the judiciary. Campania is a difficult territory to manage for many factors, especially of a human, social and political nature that have nothing to do with the technical aspects that I would like to highlight. Where there are no Neapolitan social problems, purification plants and incinerators are said to work. But who tells us they work well? I personally believe that purifiers and incinerators, as they are conceived, not only emit emissions into the atmosphere that could be avoided, but also interrupt the cycle of the return of carbon to natureThe cycles of waste management and water purification seem to work

in the north because there is no waste on the street and the waters are suitable for swimming. But if we make a more careful analysis, we realize that incinerators burn more than they should and the emissions go into the atmosphere, like those of thermal power plants. In cities, the air is not breathable; the waters of the lakes tend to eutrophication; even those of the sea have the same tendency (bathing does not mean anything); the sewers, in addition to degenerating the sewage, overflow with the autumn rains. These are all problems that seem to have no solution and that instead, with the criteria introduced by the covered purifiers, they could find sustainable solutions. In the north and south, the biological sludge, which could be a resource, is burned together with the industrial sludge because the system mixes it in the sewers and it is no longer possible to separate it. The excesses of CO2 produced by the company which, apparently, has solved the problems, where will we put them? The multinationals, with the endorsement of public research bodies, have also thought about this: they will capture it with the post-combustion process that requires greater fuel consumption (up to 30% in the case of coal) and therefore will produce a greater quantity of CO2 (up to 30%) and will bury it at a depth of almost 1000 meters at a pressure of 80 bar, with enormous costs and enormous dangers. Also huge gains for oil companies that will sell more fuels due to decreased yield (we will run out of reserves first) and will also participate in the drilling business.

If earlier it seemed that environmental protection systems were designed to damage the environment, the C.C.S. puts the icing on the cake to this way of designing environmental protection. Even the I.P.C.C. which received the Nobel Prize for the protection of the environment participates in this nefarious project. The various world leaders have been unable to invent anything other than the CO2 quota market which allows those who pay to be able to pollute and those who do not want to pay to move production where it can pollute. I approve of the courageous choice not to resort to incinerators

by the mayor Luigi De Magistris and the councilor Tommaso Sodano. In the current conditions it is truly a challenge that deserves respect. The global purification can do nothing for the current Napoli but could do a lot for the Napoli of the future. I would have liked to have set this article in a different way, without any known controversy with the castes, and give it an optimistic title: “Naples, capital of global purification in the world”, but I can’t be the one to say it. I can only hope that the new environmental managers of Naples and the region are more open to the environmental innovations I propose than those who preceded them. If they are, anything will be possible. Ironically, the global purification, which could be the most complete environmental protection system in the world, comes from a citizen of Campania where the existing plants do not work, 20% of the population is not connected to sewage systems, rivers and canals are almost sewers and the sea is the most polluted in Italy. Campania would be ideal for testing the validity of these projects. The Neapolitan territory, which does not present a solution of continuity from Castellammare to Pozzuoli, could be considered the prototype of the near future megalopolises. The urban agglomeration of Naples and neighboring municipalities, having the good fortune of being close to the sea, could also benefit from the covered marine purifiers which in a few years of operation could restore coastal and even port waters. In the future, the wet fraction of solid waste (which contain 80% water) could be transferred to local purification with the simple introduction of household shredders in homes. The sediment separation processes would occur before starting the decomposition processes in cold digesters undergoing higher aerobic treatment zones. The sludge would not be dragged along the long sewer routes, there would be no emissions of toxic and smelly substances. The subdivision of the processes into many vertical modules and the slowness of the digesters would allow the neutralization of the gases produced in the aerobic oxidation and photosynthesis basins superimposed on the digesters themselves. If we consider that the cold methane

digestion of sludge has an average residence time of 50 – 60 days and that the COD is approximately 0.52 gr / per liter of waste water, with the vertical aerobic purification modules (which do not exist in any part of the world because invented by myself together with the other versions of covered purifiers) the volume of digested and dehydrated sludge can be estimated at about 0.1% of the volume of waste water. Therefore, it can be understood that the transfer of the wet fraction of R.S.U. the sewage system would be a business for the environment: it would completely eliminate the costs of collection and composting. The CO2 and methane emissions that composting entails would also be neutralized. The extraction, every 120 days, of a part of the sludge produced, digested, dehydrated and disinfected with lime, without foul-smelling bins, would solve any management and health problemPurified and rain water would circulate in the sewers. The Cuma purification plant and those of the regi lagni could become a sad memory together with the spills into the sea and into Lake Averno. Current systems and the promised C.C.S. they do not allow us to hope for anything like that.

Best Regards Luigi Antonio Pezone

P.S. Ten years later, nothing has changed at the global purification level. I am attaching this article without changing anything from the original version, to a kind of private competition to reduce CO2 emissions, launched by the billionaire ELon Musk, in the middle of the corona virus pandemic, because world governments and the United Nations have failed on all fronts. Still none of my forty filings of environmental, energy, health patents have been tested. The projects are still young and current, but I have aged ten years. Probably in a few years I will need to be technologically updated, I hope with one of my interactive inventions to survive. Not to become young again, but to reduce consumption and eliminate the organs that will no longer be repairable. Without introducing into the human body

an interactive invention that oxygenates the blood, produces energy and powers technological devices and artificial intelligence, the duration of human life cannot be prolonged very much.