Let’s talk scientifically about the Italian disaster of the Bargi hydroelectric power plant.

The recent disaster that occurred in Italy on 04.10.2024, after the commemoration of the seven people who died in the accident that occurred in the ENEL hydroelectric power plant in Bargi in Italy and while awaiting the examination of the black box of the plant, let’s talk, scientifically, about the the current production of hydroelectric energy on planet Earth. The black box will be able to help us understand the sequence of phases of the accident which are now completely unknown. In the meantime I searched the web for some information on the plant concerned, which I am reporting https://www.ilpost.it/2024/04/12/centrale-idroelettrica-bargi/

How the Bargi hydroelectric power plant is made.

Its ten floors extend for almost 60 meters immersed in Lake Suviana. However, the water that produces the energy comes from Lake Brasimone which is located a few kilometers away at a higher altitude. After producing the energy, the water is returned again to the upper basin of Lake Brasimone.

The hydroelectric power plant was built in 1975 by Enel and is located in the south-eastern part of Lake Suviana, a long and narrow artificial basin. The power plant is about two kilometers from the Suviana dam, which forms the lake, and is not affected in any way by the consequences of the explosion (which destroyed the power plant immersed in the lake).

The Bargi hydroelectric power plant is managed by Enel Green Power and is the most powerful installed in Emilia-Romagna: inside there are two 165 megawatt energy production groups for

a total installed power of 330 megawatts. It is part of the plan for switching on the national grid in the event of a blackout. If there were to be a national emergency, it is able to deliver its maximum power in 4 minutes.

Like all hydroelectric plants, the Bargi one is also made up of a water basin, penstocks – that is, where the water is subjected to a certain pressure – and energy generators. The reservoir is formed by water stored thanks to a barrier, in most cases a dam. The water coming from the basin is conveyed through an entrance thanks to some bulkheads, which can be opened and closed on command, and then passed into the pipes. A filter system prevents the passage of logs or debris. The water then reaches the turbines and makes them rotate. The turbines are connected to an alternator that converts the mechanical to electrical energy.

The electricity obtained must then be transformed to be taken anywhere via the national grid. Before being fed into the grid, the electric current must pass through a transformer. In fact, transport takes place on high voltage power lines (above 30 thousand volts) to reduce losses, and a transformer is essential to raise the voltage compared to that coming out of the generator. After passing through the turbine, the water ends up in a discharge channel and is returned to the lake: hydroelectric power plants in fact do not “consume” water.

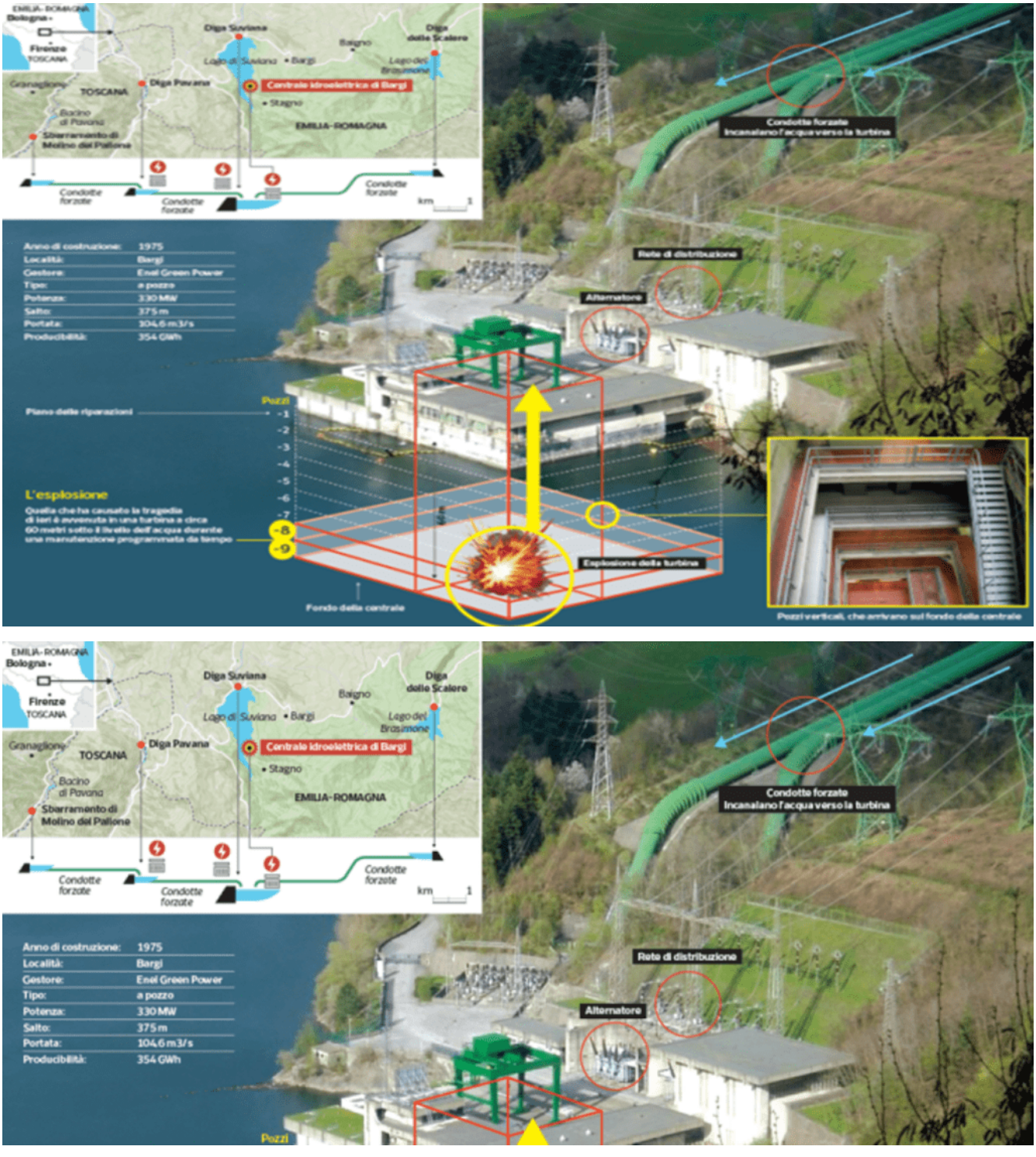
Unlike many hydroelectric power plants built in Italy, the one in Bargi is defined as “daily cycle generation and pumping”. This means it can produce energy and recharge the reservoir by pumping water in the opposite direction through turbines.

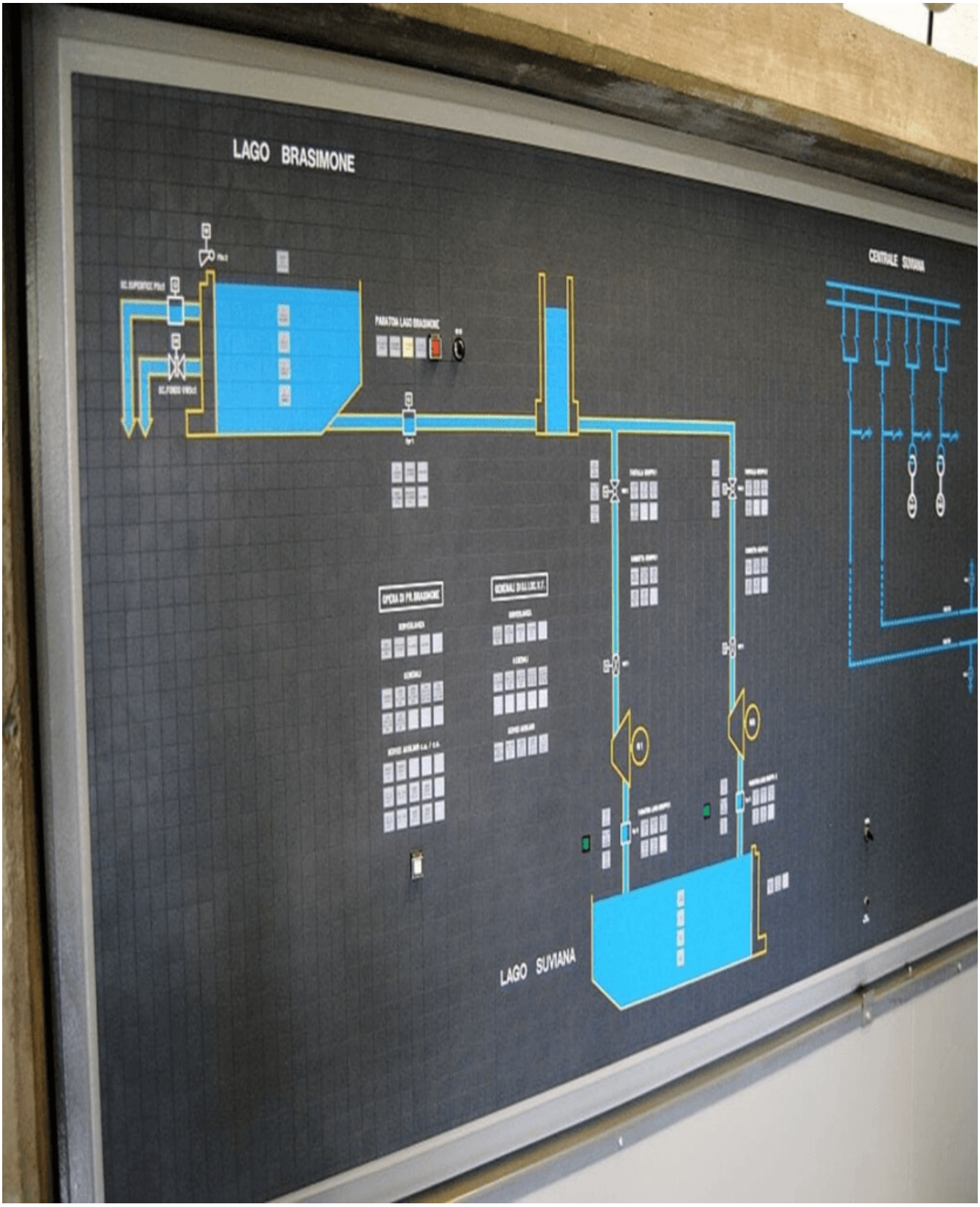
In Bargi, in fact, the water from two artificial lakes connected to each other is exploited: Lake Brasimone, higher up than the power plant, and Lake Suviana. The water of Lake Brasimone passes through a tunnel 4,757 meters long, with a diameter of 5.4 meters, built into the mountain. The tunnel ends in Stagno where the water is introduced into two parallel

forced conduits of approximately 4 meters in diameter, for a flow rate of 104.6 cubic meters per second, which reach the power plant to operate the turbines and produce energy.

When the demand for electricity from the grid is lower – perhaps during the day due to the photovoltaic systems, or at night when some power plants produce it anyway, as they cannot be turned off – the turbines are activated in pumping mode: they push the water into the pipes up to to Lake Brasimone with a flow rate of approximately 47 cubic meters per second. The lake reaches the optimal filling level in about 6 hours (it is also an important activity for water recovery, especially in periods of low rainfall and drought). To exploit the pressure of Lake Suviana, which pushes the water naturally into the power plant favoring the pumping phase, the power plant was built “as a well”, that is, 54 meters below the level of the lake. The two 165 megawatt turbines built by the

companies Riva Calzoni and De Pretto Escher Wyss are located on the eighth floor. On the lower floors there are other facilities. The ten floors of the power plant, all approximately one thousand square meters large, are connected by a vertical shaft that reaches the lowest part of the plant. On the surface there is an overhead crane, a machine for moving very heavy loads, capable of lifting up to 250 tons for maintenance operations




LAGO BRASIMONE
CENTRALE SUVIANA
LAGO SUVIANA


RIVA
BOLOGNATODAY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The explosion occurred on the eighth floor and partially destroyed the slab, one of the architectural elements between the seventh and eighth floors. The ninth and tenth floors were flooded and in the last few days the water also reached the

eighth floor, completely flooding it. Before descending to the eighth floor, the firefighters had to understand where the water was coming from: the main pipes were closed and then pumps were installed, i.e. pumps used to suck up and move large quantities of water, to bring the accumulated water to the surface.

With rescue operations just concluded, it is difficult to reconstruct the causes of the explosion, which the Bologna magistrates will deal with in the investigation opened for manslaughter and manslaughter. According to experts consulted in recent days, the point most at risk of an explosion or fire is the alternator and not the turbine, which has a mechanical function.

https://corrieredibologna.corriere.it/notizie/cronaca/24_aprile_10/centrale-elettrica-suviana-f8378dc6-8505-4fe0-b9bf-0786f2571xlk.shtml?refresh_ce

Hell broke out suddenly in the Bargi hydroelectric plant, managed by Enel Green Power, immediately after lunch. A turbine would have exploded on the eighth floor – about forty meters below the water level – and would have first caused a fire and, then, a refrigerant pipe would have caused the flooding of the ninth floor and the collapse of an attic. The causes and possible responsibilities are yet to be ascertained but it seems that before the explosion a strange noise was heard which prompted some workers to move away. Meanwhile, Enel Green Power, in a note, explains that it is "collaborating with all the competent authorities".

The hydroelectric plant usually consists of the dam that creates the related reservoir or artificial lake; from the penstocks that channel the water towards the turbine; from the hydroelectric power plant with the energy generation groups consisting of the turbine-alternator complex. The one in Bargi has the particularity of being able to exchange, depending on needs, enormous volumes of water between the two basins: when

there is a high demand it is used to produce electricity while when the demand is minimal such as at night, restart the water from Suviana to Brasimone.

Personal considerations of the undersigned, former designer and installer of water lifting and purification systems.

From the news reported in the two articles cited above and from the photos published on the internet, I tried to form a personal opinion of what happened. In my publications, I have always written that I am in favor of the energetic exploitation of natural hydraulic jumps, but against the construction of dams and artificial reservoirs in the mountains because the water must follow its natural path. These expensive works have produced more damage than benefits to humanity, both due to the failure of the dams and the increase in the severity of the floods due to the fact that the heavy rains, finding the water basins in the mountains already full, arrive with greater speed in the plains unprepared to welcome the large rainfalls, unfortunately increased by the immense quantities of steam produced by current global energy production.

My solutions, proposed in vain by a retired inventor, propose water management in the plains where agricultural, industrial and urban activities are mainly developed, without hydraulic jumps and with stepped lifting to move the water from one area to another. My solutions produce hydroelectromagnetic energy at atmospheric or compressed pressure and can replace all current terrestrial energies with lower costs by extracting energy directly from the terrestrial environment, both to create fixed and mobile (transport) systems.

I would like to connect in particular to a previous article of mine entitled “Relativity and technology in the new hydrology” published on 07.22.2016 **http://www.spawhe.eu/relativity-and-technology-in-the-new-hydroelectric-energy/, http://www.spawhe.eu/it/relativita-e-tecnol**

ogia-nella-nuova-energia-idroelettrica/, of which I report a small summary and the main figures

1. SUMMARY

With this research article, I refer above all to the fathers of science who, in the era before the industrial era, used reasoning alone to find links between the laws of space, matter and nature. With industrialization, specializations were born and the global reasoning of science was lost. As a modest designer, but above all system installer, who has had the opportunity to explore industrial, environmental and energy technologies, I could not help but notice that there are enormous gaps between one system and another, even within the same systems, both in the purification and energy sectors and in the management of water resources. The science of the past was universal while the modern one that develops in laboratories has become biased. Technology that didn't exist has started down the same path. It has made enormous progress and modern companies are super specialized in individual sectors, but from an environmental point of view, there is no complete plant in the world. I do not doubt the good faith of the professionals, but I also believe that complete environmental reasoning cannot be carried out if transversal technical and scientific knowledge is not brought together and global work cycles are not set up that are simultaneously purifying, energetic and managerial. This publication is a summary of some environmental patents, above all, linked to water management and the production of hydroelectric energy, different from the current one, which are making a very difficult journey to be understood, precisely due to the fact that none of the people involved works, public and private, he is used to thinking globally, but going into the details, purification, energy and management. Unfortunately, this is the only way to achieve the synergies needed to achieve global environmental management that does not waste resources. Those who believed, for economic reasons, to neglect the global

management of the environment, concentrating only on the production of energy, more or less clean, to be sold on the international market, will be surprised and disappointed because the global management of the environment will make it possible to produce energy clean dozens of times cheaper than the current ones. We just have to wait to see until the authorities, biased science and the economy pretend not to understand these inventions, which are available to everyone, especially the poorest and those looking for work. Because there is work for everyone if they want to correct the mistakes of the present and the past.

INTRODUCTION AND METHOD

The famous scientist Albert Einstein, with his theories on relativity, demonstrated that matter and energy can be considered as a unit, given that one can transform into the other according to a precise mathematical relationship. A practical confirmation of this statement can be found in the action of the wind which can produce electricity through wind turbines but can also break the inertial balance between the troposphere and hydrosphere, creating kinetic energy in marine currents. This, for the undersigned, is the energetic aspect, underestimated worldwide, since we too can break this balance, artificially by means of the intubation of a small current of water and a pump placed in the depths of the water and concentrate all the kinetic energy produced on the blades of a hydraulic turbine. There is no law of energy conservation that can prevent this and no energy balance to be made, other than that between the energy spent and the energy produced, since we take energy from an infinite source. The difference between energy spent and produced is immense, in favor of the energy produced, since we are not in an isolated system like Newton’s pendulum. In fact, the entire weight of the intubated water column (m*g*h) acquires kinetic energy (1/2 mV2) braked by the turbine blades, whose connected alternator produces electrical energy, by virtue of the weight of the water masses conveyed

onto the turbine by the effect of gravity and atmospheric pressure, once the underlying masses of water have been moved by means of the pump. In fact, Einstein states that the energy supplied does not increase the speed of the body, but its mass: the body becomes increasingly “heavy”. This is also confirmed in the practical calculations of the heads of the lifting pumps from which the positive head on the suction side is subtracted, being considered an energy in all respects. This energy becomes even more important if instead of raising the water we want to use pumps to produce energy. In this case, it is advisable for the pumps to direct the flow rate in the direction of the force of gravity and atmospheric pressure. Using this system the difference between the energy spent and the energy produced becomes enormous also because the surface water has the same density as the water below and therefore does not need to rise to the surface, if we find ourselves in a narrow basin (the water simply change position). It is enormous, as in hydroelectric power built in the terrestrial environment, at atmospheric pressure, because at the exit of the turbine the hydrostatic pressure of the water cannot oppose the residual kinetic energy. In fact, since water is incompressible, at whatever depth the outlet is located, the hydraulic resistance at the outlet is always the same (v2/2g). Therefore, the energy spent can be multiplied by one hundred, two hundred etc. It depends only on the column of water that weighs on the pump and turbine. In fact, the system is similar to an open hydraulic circuit, under head, which ends at the turbine exit with a submerged outlet in an open vessel. Obviously, no comparison can be made with the efficiency of the energy produced by a thermal power station or a heat engine which does not reach forty percent of the lower calorific value of the fuel. To these low yields it is necessary to add the costs of extraction, transport, refining and purification of the fumes produced.

However, to exploit the positional energy of surface waters in a more versatile way and to use this energy also in mobile

plants, the invention of pumps and turbines with double power on the suction side was also necessary, which are the simplest invention of the undersigned. In fact, with this invention the circle is completely closed, demonstrating that in addition to the world's purification plants, water lifting systems are also wrong. Even the famous Mose in Venice, which cost 5.5 billion euros, could have been conceived differently: cheaper, more efficient, becoming, thanks to the invention of these pumps, also an energy producer.

The absence of such pumps and turbines, which are simple to create with current technologies, has prevented the correct sustainable development of industrial, environmental and energy systems. In fact, if they had been born at the beginning of the industrial era, the energy solutions summarized in this publication would probably have made the construction of large heating systems useless; Energy transportation that wastes resources and pollutes; the large pumps, the large turbines and the large engines, which with the new lifting systems coupled with hydroelectric energy, would not be needed. The new hydroelectric energy, if I'm right, can be produced everywhere, with yields tens or hundreds of times higher than other energies, including fossil energy. Even much of the underground extraction of oil and gas, the transportation and refining of these fuels, would be economically useless. Consequently there would have been no motive, which accounts for over 90% of total pollution. Obviously, even solar and wind power cannot compete with the new hydroelectric, not only because they do not ensure continuity of operation and therefore require energy storage systems, but also because they cannot exploit position or pressure energy. Unfortunately, even the obvious need for these pumps and turbines was met with silence from the manufacturers. They don't look at the new market that would open but only at the one that would close. This invention published on 08.31.2016 is an international patent. **http://www.spawhe.eu/pumps-and-turbines-with-separated-double-**

supply-until-to-the-impeller/, http://www.spawhe.eu/it/elettropompe-e-turbine-con-doppia-alimentazione-separata-fino-alla-girante/. I have not found the time to develop concrete projects even on turbines with dual separate power supplies. I focused above all on pumps which, with separate dual power supplies up to the impeller, used as turbines, allow the flow rate to be added and the input pressure of two fluids entering the same impeller with different pressures to be uniform upwards. While turbines used as pumps but modified in the same way would reduce the flow rate and output pressure. In essence, they would reduce performance by behaving like energy sinks. These are also useful but in particular cases.

We must ask ourselves why, above all, the pump with the double separate power supply was not invented by those working in the purification sector, since mixing and recycling dirty and clean water in an environment pressurized with compressed air produces the oxygenation of both due to the of Henry and Dalton's laws? Why wasn't it invented by energy production workers, since mixing and recycling water with different inlet pressures in an environment pressurized with compressed air produces pressure uniformity as a result of Pascal's law?

This modification could not arise from the pump testing laboratories, nor from the tenders made by public offices, nor from the multinational procurement companies, but from the global design of the systems, which no one wants to develop, preferring mono-thematic applications, which cannot exceed the own technological and scientific limitations. The undersigned made the invention to reduce the energy costs of raising the water which should have produced artificial rainfall on calcareous material in order to produce carbonates in the water by consuming the CO2 which stratified on the waters of the purifiers, sedimentation plants, lakes and of the seas being heavier than air.

Unfortunately, public and private silences demonstrate that no one is working in this direction. At least public planning

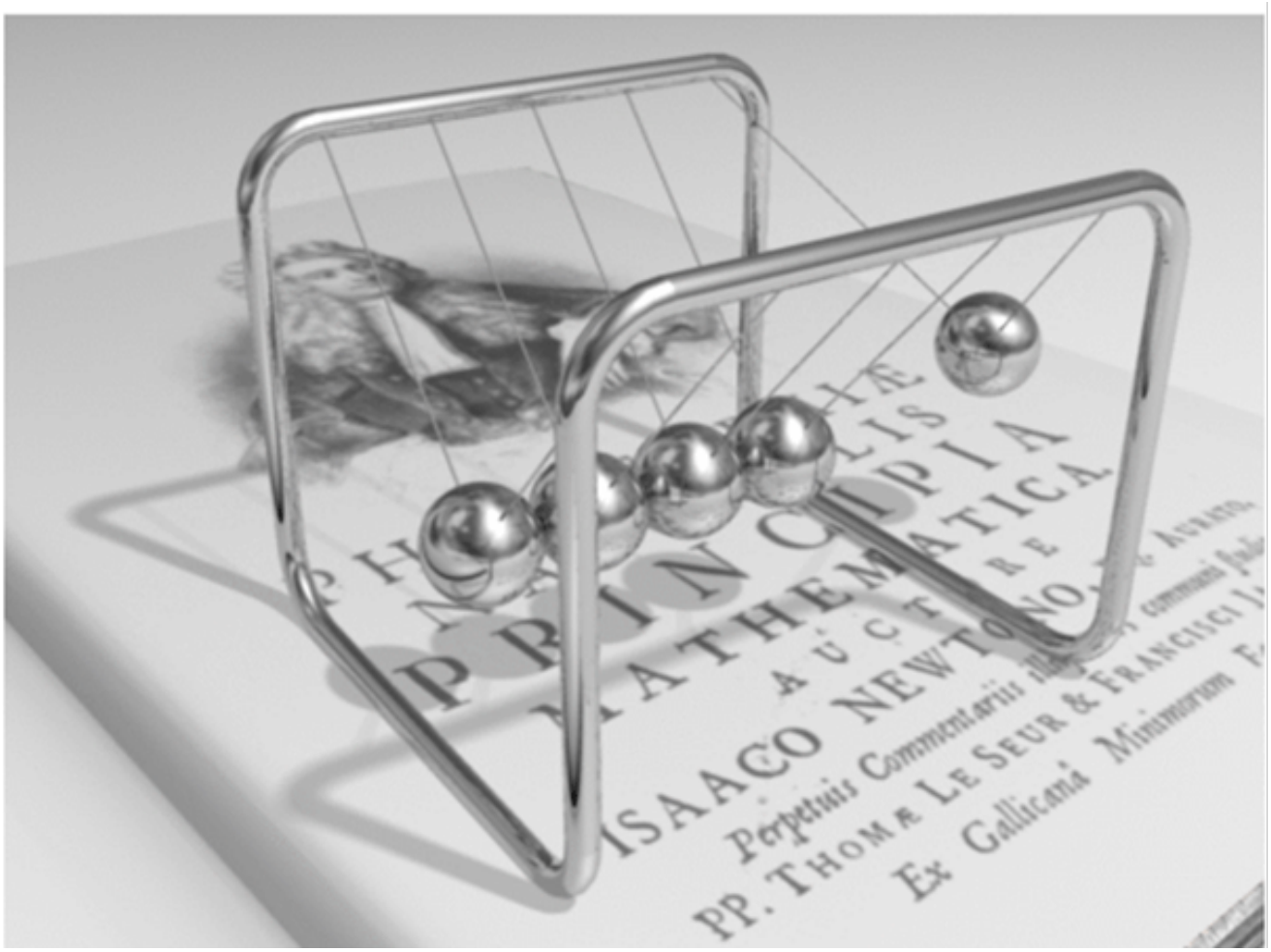
should be able to bring together technicians with different experiences, especially industrial ones, which cannot be acquired in universities. Today, environmental and energy systems are combined with the machines offered by the market and the market offers what creates the greatest profit for manufacturers. But machine builders are specialists in machine construction, not in overall plant design. The dog will continue to bite its tail forever if public designers do not learn to update the global state of the art on a daily basis with working groups that meet daily, as happens in a very large manufacturing company that produces a complex and high-tech product, like the automotive industry. It’s a shame that this industry, in one hundred and twenty years, has not realized that the energy source of the engines also had to change. This could be another challenge of the future: to make the mobile hydroelectric energy generator as small as possible, proposed by the undersigned, by increasing the operating pressure of a compressible gas on incompressible water, without fuels, with path autonomy that is inconceivable today, if not dangerous nuclear energy is used. But nuclear energy will hardly be able to be mounted on means of transport. Naturally, the electronic technology developed for controlling the speed of electric motors, opening valves and controlling pressures is also essential. But even this invention would not be possible without the pumps with dual power on the suction side, which will not allow the dispersion of the operating pressure or even the water, which together will produce energy. But manufacturers of thermal engines are developing hybrid engines that will reduce pollution, not eliminate it, while electric cars will entail large costs for disposing of accumulators, little power and little range. Half-solutions could be fine when complete solutions were not in sight, such as the pressurized mobile hydroelectric plant, invented by the undersigned and not created by anyone.

Is there anyone in the world, public or private, with greater economic means than a pensioner who wants to go against the

grain? I think that the world, so big, is getting lost in a small glass of water, because only a few thousand dollars or euros are needed to verify the basic principles of these inventions. If everything works, and I have no doubts, industrialization can be achieved quickly under fair competition between all the companies involved, giving to Caesar what is Caesar's. It could also be a simple thank you. As an inventor, I do not believe in the current rules of intellectual property, which have never protected inventors but only industrialists, who can pay for protection. Current industrial property seems designed to protect only multinationals and commercial products.

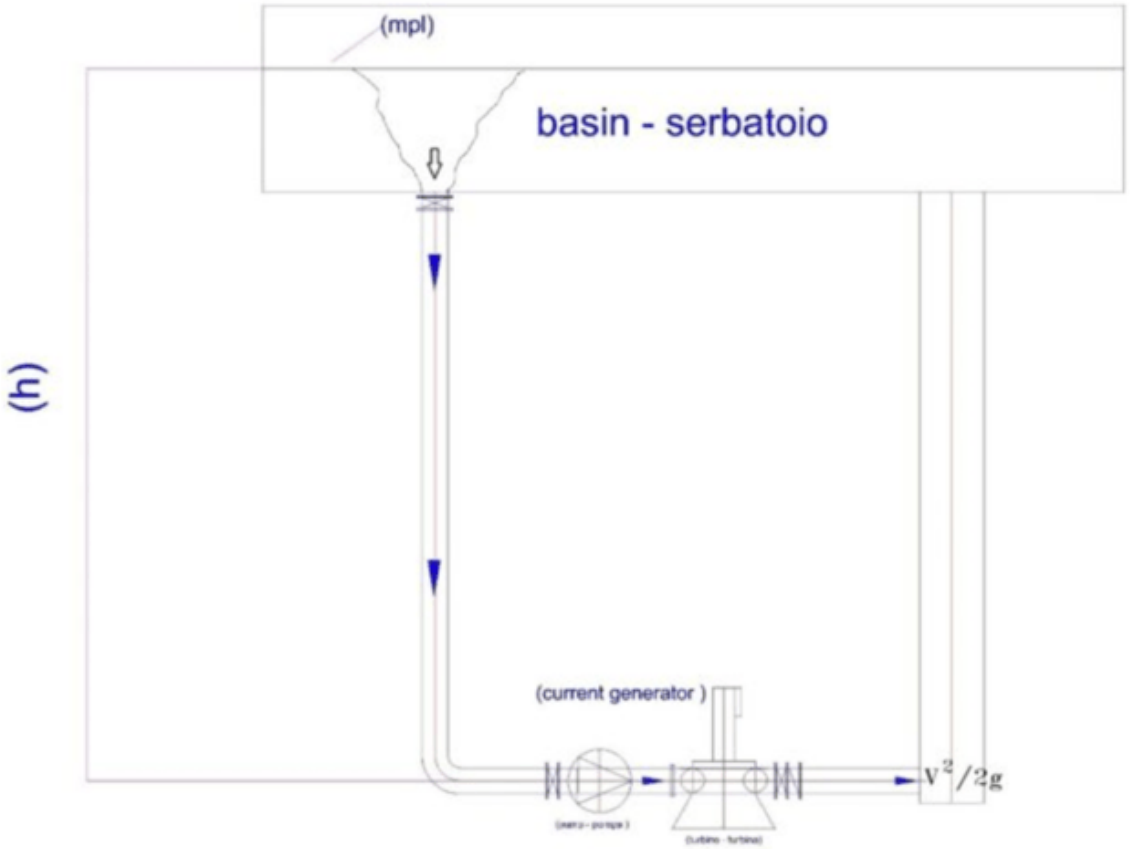
The true fathers of science and progress were those who studied non-partisan solutions, even going against the grain, such as Aristotle, Archimedes, Galileo, Pascal, Newton, Einstein. The undersigned quotes, unworthily, these great men who demonstrated, even before industrial development took place, without the support of industrial and information technologies, that everything in the environment and in nature is connected with a precise logic, which probably would not be never been found in modern society, where research is motivated only by profit. Today, the genius of these great men would have been absorbed by some multinational company and they would never have made those great discoveries motivated only by the love of science. For practical purposes, especially environmental ones, the discoveries of these great men are not used to their full potential, since they have rarely been used synergistically. Private profit has taken over and scientific applications have been cut into slices, so that there are lobbies for various types of energy and various types of purification, which leave enormous technical and legislative gaps. No one realizes that in the entire world there is no rationally connected set of systems to complete the inorganic and inorganic cycles left pending by various human activities. But the undersigned, who unsuccessfully proposed global purification systems, in this article wants to

talk, above all about the new hydroelectric energy, which is making an even more difficult journey, not even receiving the support of the patent offices. Aristotle in his “Physics” of the 4th century BC. he asserted that the natural state of bodies is stillness, i.e. the absence of motion, and that any moving object tends to slow down until it stops, unless it is pushed to continue its movement. The figure below (extracted from Wikipedia) shows Newton’s pendulum, composed of various small spheres (usually five), which is used to illustrate the laws of conservation of momentum and energy.



This simple experiment is an isolated system that demonstrates that as time passes, air friction progressively dissipates the energy initially imparted to the beads. Consequently, the period of oscillation of the pendulums progressively decreases until the motion of the spheres stops. As Aristotle said, it is necessary to provide energy to keep it moving. The problem of humanity, as well as purification, which as mentioned

above, no one wants to seriously address, is also that of clean energy, which is used to keep human activities moving. We don’t even want to address this problem seriously, if no one wants to discuss the new ways of producing hydroelectric energy that the undersigned proposes, not only on the basis of theoretical knowledge, but also practical design and construction experience. I reported above the very well-known and simple pendulum experiment, as a premise for a much broader discussion, not on the conservation of energy, which is obvious, and it is certainly not myself who questions it, but on the transformation of energy, which it’s something else, much more important. In fact, mechanical perpetual motion cannot exist but the synergistic, multidisciplinary one, between scientific principles, technology applied to hydraulics, mechanics, pneumatics, can exist even with very high efficiency, as I demonstrate in this publication.



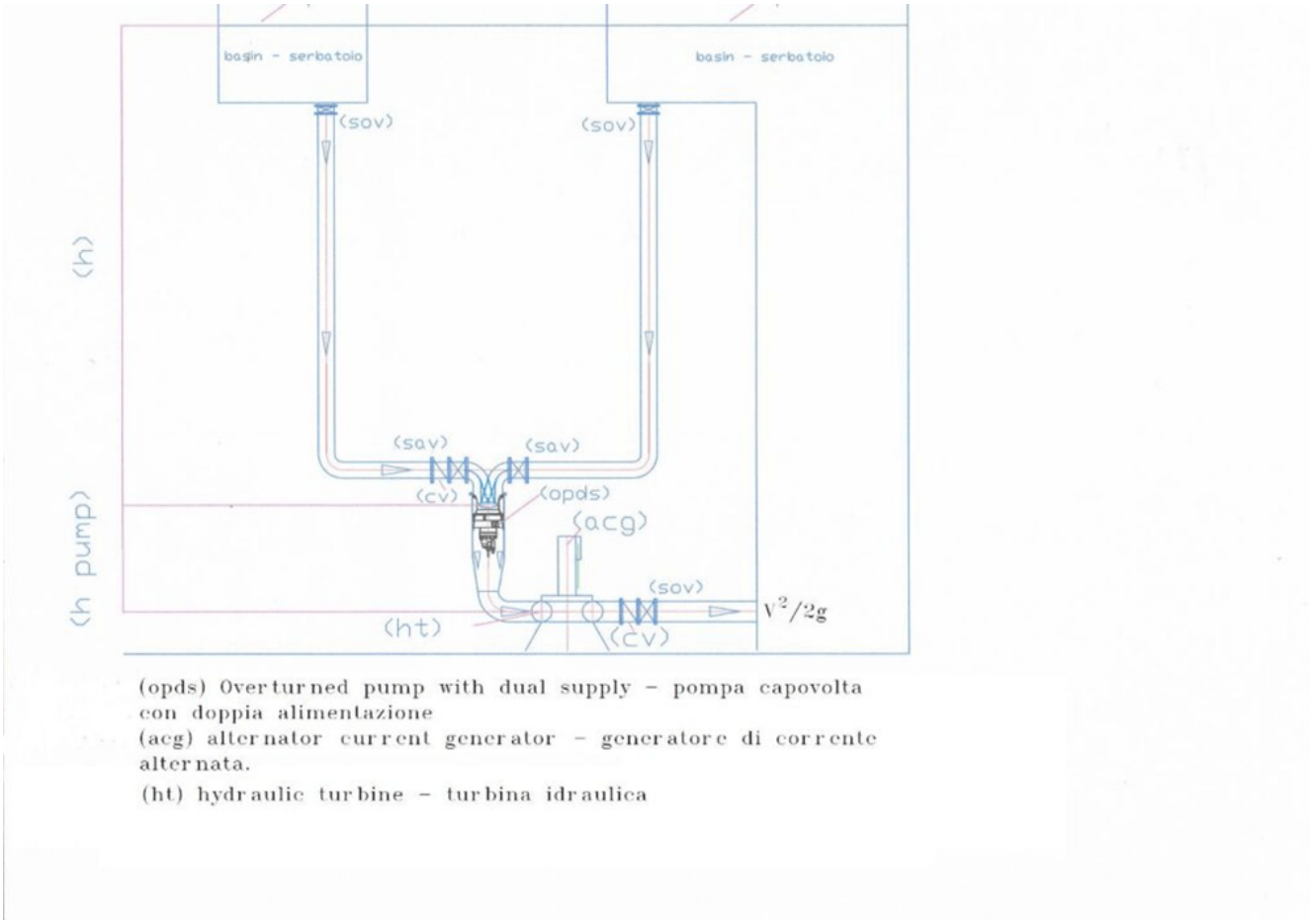
open hydro circuit with water recycling - Circuito idroelettrico aperto con riciclo di acqua

In this circuit, the position of the pump is very important. Must be placed in the lowest point of the circuit, so that, The upper tank which determines the hydrostatic pressure of the circuit and provides the entire capacity of flow , to minimize the prevalence of the circulation pump, which only has to overcome the state of inertia of the ' water and have the adequate supply passage sections of the turbine. The large tube section, which rises towards the tank, placed after the turbine is considered an extension of the upper tank, for which it is only necessary to calculate the pressure loss at the outlet $V^2/2g$

In questo circuito, la posizione della pompa è molto importante. Deve essere posta nel punto più basso del circuito, affinchè, Il serbatoio superiore che determina la pressione idrostatica del circuito e fornisce tutta la portata, riduca al minimo la prevalenza della pompa di circolazione, la quale deve vincere soltanto lo stato d'inerzia dell'acqua ed avere delle sezioni di passaggio adeguate all'alimentazione della turbina. Il tubo di grande sezione, che sale verso il serbatoio, posto dopo la turbina è considerato un prolungamento del serbatoio superiore, per cui è necessario calcolare soltanto la perdità di carico allo sbocco $V^2/2g$

The figure below shows how the positional energy of the shallow waters (without the hydraulic head) could be used to

produce energy instead of raising the waters to the surface by means of a pump which increases the water flow rate and pressure, exploiting the gravity of the intubated water column and therefore, concentrating the energy on the blades of a turbine, which produces electrical energy. In fact, the static energy released by the drilling of the connecting pipe (m*g*h + ½ m v2 = constant) between the two basins is that provided by the pump and the gravitational force, released by the breaking of the state of inertia caused by the same pump, if they do not produce mechanical energy by lifting the water, as represented in the figure above, nor electrical energy by means of a turbine, as shown in the figure below, they can only produce heat due to friction with the atmospheric air in the which the water would disperse, or with the water molecules, if the water is reintroduced into the basin without the reduction in speed that the turbine would produce. In fact, water, contrary to those who think to the contrary, can be reintroduced into the reservoir even in the presence of high hydrostatic heads since the hydrostatic pressure does not oppose the kinetic energy, but with the classic pressure drop at the outlet (V2/ 2g).



(opds) Overturned pump with dual supply - pompa capovolta con doppia alimentazione
(acg) alternator current generator - generatore di corrente alternata.
(ht) hydraulic turbine - turbina idraulica

The figure below shows how the positional energy of the shallow waters (without the hydraulic head) could be used to produce energy instead of raising the waters to the surface by means of a pump which increases the water flow rate and pressure, exploiting the gravity of the intubated water column and therefore, concentrating the energy on the blades of a turbine, which produces electrical energy. In fact, the static energy released by the drilling of the connecting pipe (m*g*h + ½ m v2 = constant) between the two basins is that provided by the pump and the gravitational force, released by the breaking of the state of inertia caused by the same pump, if they do not produce mechanical energy by lifting the water, as represented in the figure above, nor electrical energy by means of a turbine, as shown in the figure below, they can only produce heat due to friction with the atmospheric air in the which the water would disperse, or with the water molecules, if the water is reintroduced into the basin without the reduction in speed that the turbine would produce. In fact, water, contrary to those who think to the contrary, can

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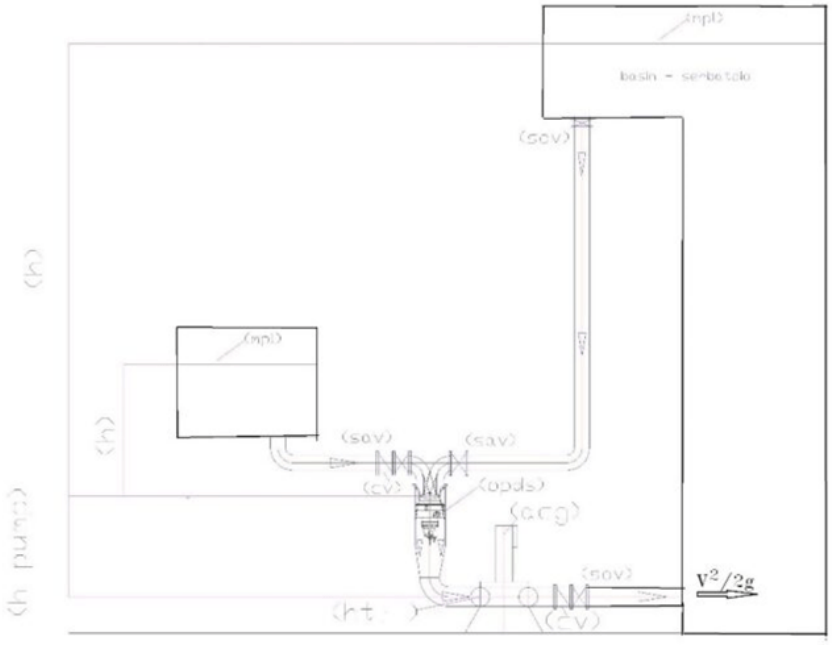
The figure below explains the reasons why we included in the diagram a pump with dual power supply on the suction side (which does not exist at the current state of the art). In fact, you can see that the water basin on the left side has been lowered, therefore, two flows of water with different pressures enter the pump. The details of how the pumps are made internally are described in the chapter which talks about modifying the pumps, at this stage it is sufficient to say that with this pump, the waters in the pump can be mixed and come out with the sum of the flow rates and the pressure provided by the positional energy of the surface waters of the upper basin. If the passage sections are adequate to transmit the entire pressure even to the waters with lower pressure, since the thrust force is equal to the unit pressure for the section, we can also produce energy by lifting the waters from the lower basin to the upper one , for the simple fact that water does not need to be raised for two reasons:

1. Because the water level on the suction and delivery is the same;

2. Since the density is the same throughout the basin, it is sufficient to simply insert it at any point in the volume of the basin or in an extension of similar large section to the same, since the water takes on the size of the tank that contains it with the minimum expenditure of energies, not attributable to external forces.

Not only is this system the absolute best for energy production, it is also the best for the management of surface water, not requiring accumulations of water in the mountains which produce floods nor extraction of water from aquifers which are becoming enriched with nitrates and heavy metals

such as arsenic. The continuous circulation of water guarantees constant oxidation and therefore, by producing energy, we can distribute water for drinking, irrigating, purifying and even conserving low water where high water is a danger for people and crops. However, these concepts will also be taken up in the chapter which talks about modifications to lifting systems

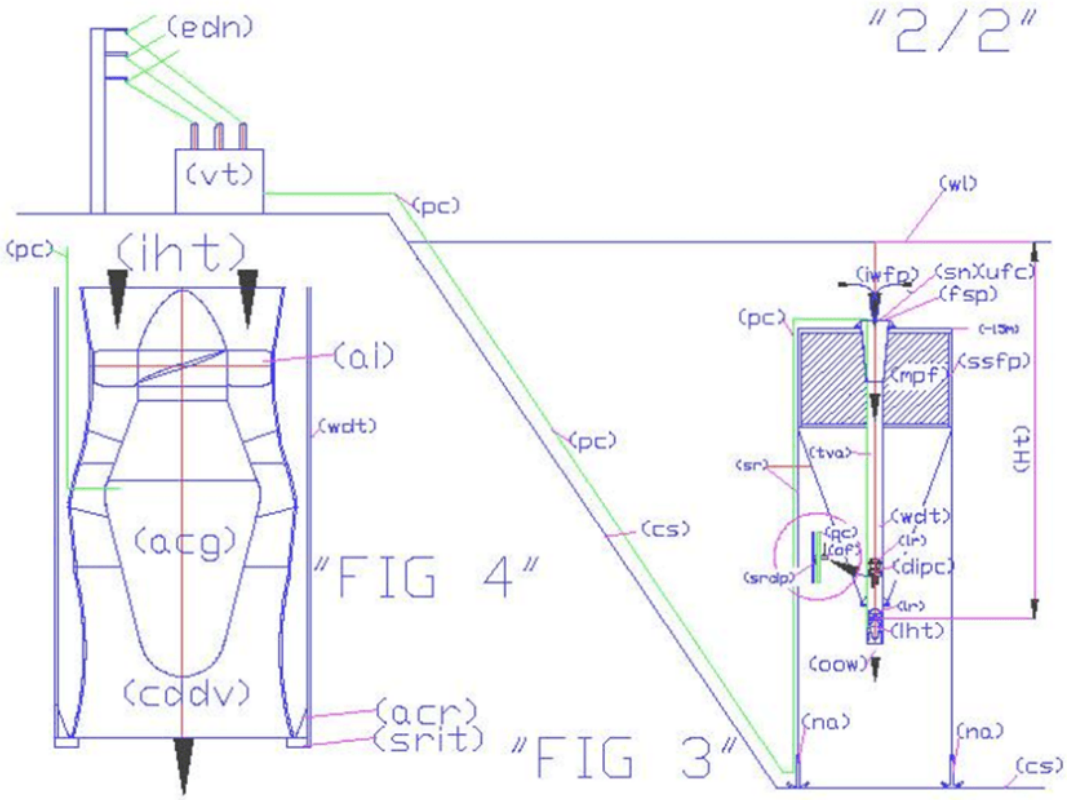


(opds) Overturned pump with dual supply - pompa capovolta con doppia alimentazione (ht) Hydraulic turbine - turbina idraulica (acg) alternator current generator - generatore di corrente alternata.
Fac simile of electric energy position with lifting and water recycle
Fac simile di energia elettrica di posizione con sollevamento e riciclo di acqua.

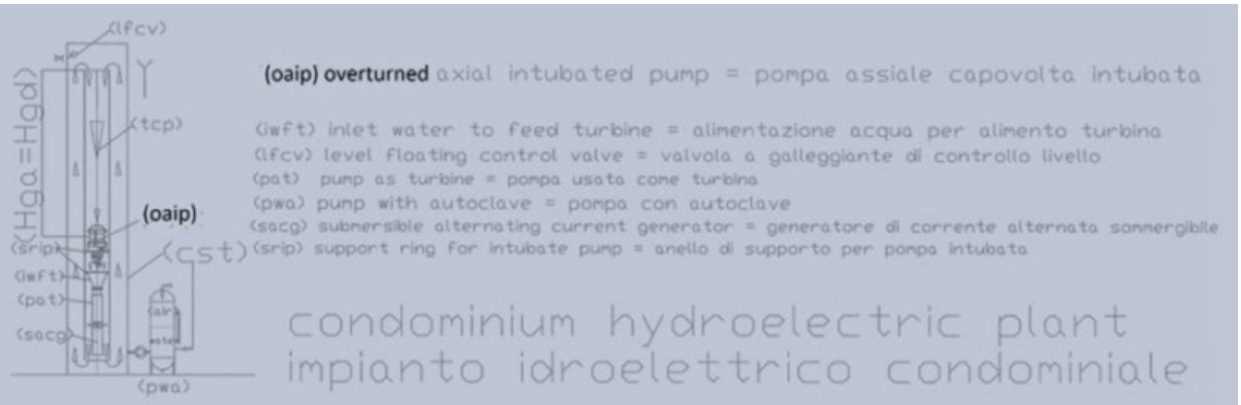
The silence on this topic on the part of professionals, especially science, is very serious since in existing systems the intubation of water upstream of the turbine already takes place. It is the indispensable condition for the water to exert its own weight force on the turbine poles, therefore, in a system full of water, where the state of inertia prevails, the insertion of a simple pump with very low head is sufficient, before the turbine. It is not true that this system can transform only the head of the pump into energy. The entire column of water acts on the pump. If this were not true, the height h would not have been included in the

Torricelli formula, which concerns precisely the distance of the surface water from the point of withdrawal of the kinetic energy, and until proven otherwise, in all hydraulic calculations the positive head on the pump must be subtracted from the head of the system calculated for the lifting of the water. But in the specific case they must not be raised since the hydraulic circuit ends at the outlet of the turbine with an outlet in an open vessel, which is independent of the depth of the outlet, but depends only on the outlet speed (V2/2g), which is slowed down precisely from the turbine, as also happens in hydroelectric plants built at atmospheric pressure. The hydraulic back pressure at the turbine outlet is apparent, not real, since the water is incompressible, The hydrostatic pressures are balanced but the total pressure is greater on the turbine side and the residual kinetic energy must only overcome the friction between the molecules. In the same way as in an atmospheric outlet it must overcome the friction with the air molecules. In essence, current hydrology applies the principle of energy conservation in small details such as variations in sections, rightly stating that a decrease in speed corresponds to an increase in pressure and vice versa but it is lost in complete systems, using water like a weight to be exploited to produce energy and to be lifted to distribute water and defend the territory. Unfortunately, the second part of hydrology, which raises the water, is against the conservation of energy, because water in the liquid version is impalpable, indivisible, and incompressible and takes the shape of the tank that contains it, therefore, in tanks always full, the water does not absorb energy for lifting, as it does not need to be lifted, but at the same time, if intubated, separated from the surrounding waters, it can assert its own weight, as in current hydroelectric power, which is achieved at pressure atmospheric. The only difference is that it is necessary to insert a pump that powers the turbine, not to create pressure but only to break the inertial equilibrium that Einstein talks about. Obviously, the hydraulic scheme of the always full basin can be created in

many versions, both to raise the water and to produce energy, one of which, even in the pressurized mobile version, which could replace the heat engines. Therefore, this incorrect interpretation of the principles of energy conservation has affected the entire industrial and environmental development of planet “Earth”. It is the global environmental authorities who must ascertain this truth, immediately stopping energy waste for water pumping and the production of polluting and expensive energy.

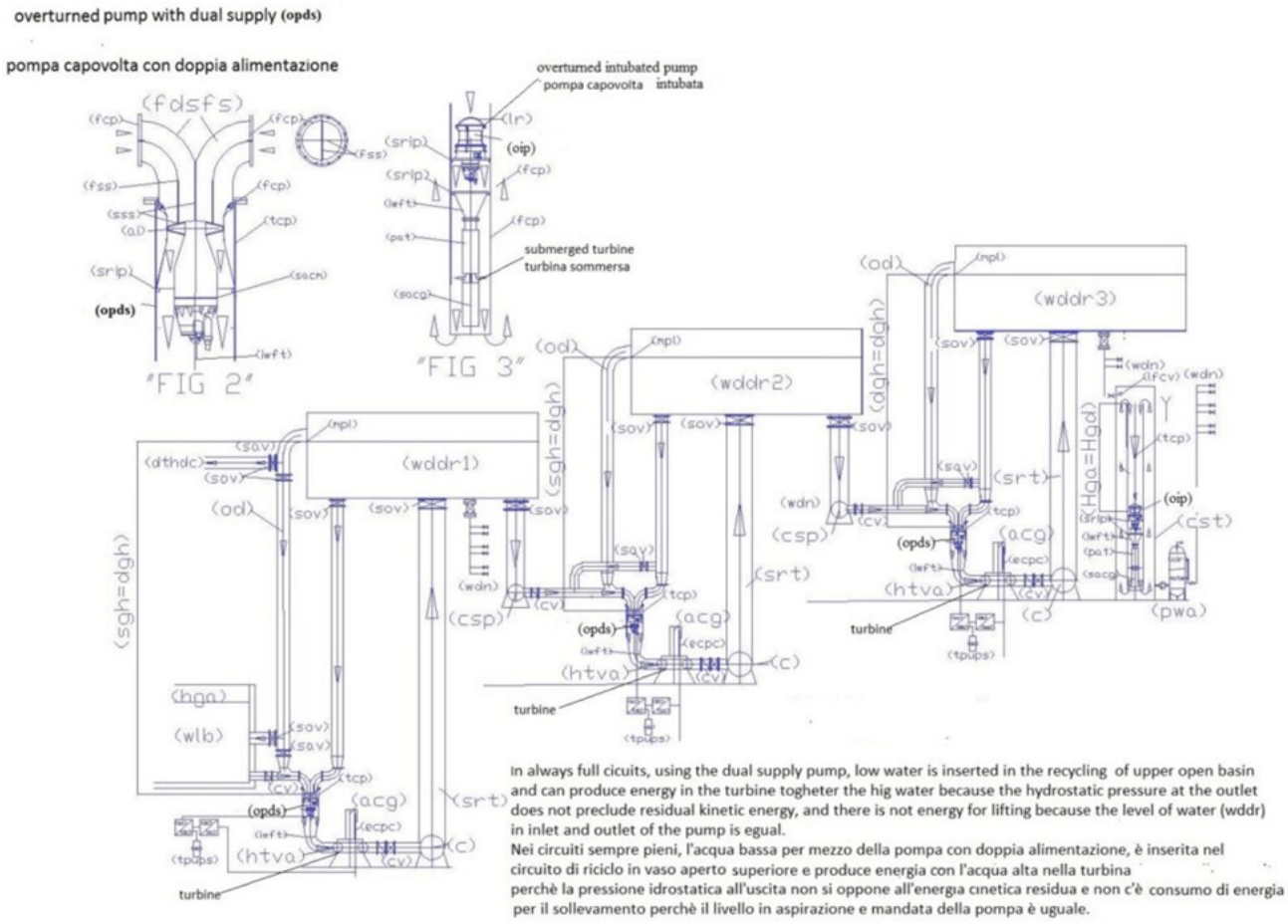


Submerged hydroelectric henergy



Come si vede dalla figura sopra riportata, persino l'acqua in attesa di essere consumata dai condomini e dalle abitazioni private, può produrre energia con mini pompe e mini turbine, o pompe usate come turbine (Pat). Supponiamo di realizzare in un tubo contenitore (cst) diametro di un metro che può essere facilmente incorporato nel fabbricato che sfrutta l'altezza utile Hu = 10 m nel tubo di discesa DN 300 (hdrt) incorporato nel tubo (cst). Supponendo che la portata dell'impianto sia 0,2 m3/s, il rendimento della turbina sia 0,75, applicando la stessa formula Pu = η*1000*Q*Hu/102, abbiamo una produzione energetica di 14,6 Kw (0,75 * 1000 * 0,2 * 10 / 102). Assegnando alla pompa una prevalenza di 0,2 m e un rendimento 0,6, la potenza assorbita dalla stessa, calcolata con la formula 0,2 * 1000 * 0,2 /102 * 0,6 = 0,64 KW. In questo caso il rapporto tra l'energia spesa e resa è 22,8 (14,6/0, 64). Le perdite di carico nel tubo di discesa, i pezzi speciali e le perdite allo sbocco, sono tutte assorbite dal battente positivo sulla pompa. Applicando le formule di Bazin, [dove Pdc in m/km = 1000*4*V2/C2*D, dove C= 87/(1+2γ/√D), dove γ è il coefficiente medio di scabrezza = 0,16]. Mentre la perdita di carico (pds) allo sbocco in m è V2/2g. Queste perdite, se calcolate, per 10 metri di tubazione sono trascurabili e addebitabili al battente positivo sulla pompa

As shown in the figure above, even the water waiting to be consumed by condos and private homes, can produce energy with mini pumps and mini turbines, or pumps used as turbine (Pat). Suppose to realize in a container tube (cst) diameter of one meter that can be easily incorporated in the building that utilizes the useful height Hu = 10 m in descent DN 300 (HDRT) tube embedded in the tube (cst). Assuming that the system flow rate is 0.2 m3 / s, the turbine efficiency is 0.75, applying the same formula Pu = η * 1000 * Q * Hu / 102, we have an energy output of 14.6 kW (0.75 * 1000 * 0.2 * 10/102). Assigning to the pump a prevalence of 0.2 m and a 0.6 output, the power absorbed by it, calculated by the formula 0.2 * 0.2 * 1000/102 * 0.6 = 0.64 kW. In this case the ratio between the energy expenditure and yield is 22.8 (14.6 / 0, 64). The load losses in the descent tube, the special pieces and losses at the outlet, are all absorbed by the positive head to the pump. By applying the formulas of Bazin, [where Pdc in m / km = 1000 * 4 * V2 / C2 * D, where C = 87 / (1 + 2γ / √D), where γ is the average roughness coefficient = 0.16]. While the loss of load (pds) to the opening in m is V2 / 2g. These losses, if calculated, for 10 meters d are very low and absorbed by positive head on the pump



There is a big difference between the above solution which raises the water in steps from one basin to another as the water is used by the subsequent basins by exploiting the positive head on the axis of a pump with the separate double supply which powers the turbine which produces a quantity of electrical energy greater than that absorbed by the pump instead of consuming it as in current lifting systems, such as the one shown below, which in addition to absorbing enormous quantities of energy (it is sufficient to read the table which shows the power of the electric motors installed), they must also spend a lot of economic resources to prevent disturbances of various motion (water hammer) every time the motors that raise the water against the gravitational force stop, instead of circumventing it with the stepped lifting proposed by the undersigned and not made anywhere in the world.

For what reason has the entire world science excluded water

from world energy production, apart from the hydraulic jump, which is a scientific banality, based on simple positional energy. World science has underestimated the electromagnetic and fluid dynamic properties of water and air and overestimated the technology developed by man.

For the undersigned, general relativity is the most authoritative confirmation of the possibility of producing electrical energy within the same volume of water, even if it is easier to understand the other physical laws, uselessly cited in patent filings and other publications of the undersigned. Who did not find any publication online that talks about the experiments carried out on the combination of pumps and turbines in line in the same water descent, to overcome the state of inertia and concentrate the moving mass on the piles of a turbine. This is also confirmed by research reports received from the European Patent Office. Therefore, no one in the world has ever tried to exploit the relative position energy between surface waters and underlying waters within the same reservoir, artificial or natural basin, sea, ocean, by means of water intubation and series coupling of pumps and turbines. No one has taken this energy into consideration due to an incorrect interpretation of the law on the conservation of mechanical energy. This law states that, in a conservative force field, the total energy, i.e. the sum of kinetic energy and potential energy, is conserved in the motion of a body under the action of the field forces. It is clear that this law refers to an isolated system and cannot be invoked in the case of the solutions I propose. Questa legge non spiega l'origine delle forze del campo, che è il vero problema da risolvere, insieme al sistema per conservare queste forze nel tempo. This law, at the time it was conceived, could not foresee that by putting together three elements, non-existent at the time, things could totally change: vertical intubation of surface water, a pump and a turbine in series at the bottom of the pipe, in the same water basin, or in the vertical extension of the same without

interruption. With this simple, cheap system, we can solve one of the greatest mysteries of nature and create an infinite, one-way flow of water, which during the descent simultaneously exploits the gravitational force, the atmospheric pressure and the weight of the ducted water, while the rising water is not necessary, as the density of the surface water is the same as that below. Therefore, combined perpetual motion: hydraulic and mechanical is possible, consuming a small part of the energy produced. The primary source is not oil, but free cosmic energy, which no one wants to use and experiment with, this solution being contested with the infamous accusation of not respecting the principles of energy conservation.

It is the classic case of the ox calling the donkey horned. Who respects the principles of energy conservation? The world ruling class with oil, shale gas, nuclear power, or myself who has seen thirty patents on environmental protection and alternative sustainable energy thrown away? Even when they granted me the patents the result didn’t change because no one wanted to invest in it. The reason is very simple: if the system is complex, despite having the recognition of the patent, no one implements it since the legislator does not issue international regulations that bind everyone (For example, to neutralize CO2, or not to discharge acidic water into water bodies: today the laws allow the discharge of purified water with PH 5.5 and CO2 and fine particles into the atmosphere because the official state of the art has not yet solved these problems, while the undersigned in 2012 vainly patented the neutralization of CO2 in greenhouses limestone which would also have produced alkaline water and reduced part of the fine particles, if the system is also used in urban centres, see chapter 6. Therefore, the patented system, ignored by the authorities and entrepreneurs, surpasses the state of the art it is not competitive. It could only be uprooted at a later stage, when the legislator intervenes, but the legislator does not intervene unless he sees at least one functioning system and the results of laboratory analyzes of

the water and air. In these conditions, the dog chases its tail endlessly, because the invention was presented by a private inventor who has no economic strength to carry it forward. When it comes to public utility plants, the ministries of economic development, the environment and the United Nations should intervene, but for unknown reasons they do not intervene. I report in its entirety chapter 6 of the article cited above.

6) THE MODIFICATION OF WATER LIFTING SYSTEMS FROM ABSORBERS TO ENERGY PRODUCERS

Current global water management is against the general principles of conservation of resources, energy, physics and mechanics. It is easy to understand the waste of one-way use of water, which could be recycled. Today recycling is too expensive from an energy point of view since no plants have been built that circumvent the universal gravitational force. In fact, everyone knows that from an energetic point of view, it is much more economical to lift a body through an inclined plane, overcoming the sliding friction resistance than to lift it directly. But to improve this system, for thousands of years men have invented rolling friction, the belt or gear transmission ratio between wheels of different diameters, and today, traveling along inclined planes we consume hundredths of energy of what would be necessary for the direct lifting of masses against the universal gravitational force. In the hydraulic sector, the equivalent of the inclined plane is the exploitation of the variations of sections legislated in Bernoulli’s formulas, Pascal’s principle and that of communicating vessels. But these principles alone have not been sufficient to significantly reduce the costs of hydraulic lifting, since the hydraulic sector has lacked the invention of something equivalent to rolling friction, which improves the general performance of mechanical transport and lifting machines. In the hydraulic sector, the invention that can be

considered equivalent to rolling friction is the invention of the pump with double power supply on the suction side, which, combined with the Bernoulli and Pascal principle and the principle of communicating vessels, allows exploiting the one-way gravitational force, even raising the waters. By modifying the current hydraulic lifting systems with the introduction of these pumps, the efficiency of water lifting comes very close to the efficiency of mechanical lifting that use the inclined plane and rolling friction, despite being based on completely different principles. In fact, mechanical lifting uses much longer paths, while hydraulic lifting moves a quantity of water much higher than that to be lifted in always full circuits, since it is the same water with the higher geodesic height that lifts the water of the basin placed at lower level. Therefore, if we recycle 1000 L/s at low speed, we can lift around 500, with yields very similar to those allowed by mechanical lifting on an inclined plane and rolling bearings. But, once pumps have been invented, continuing to think about modifying hydraulic systems, one can easily understand that hydraulic systems will largely surpass mechanical systems. In fact, mechanical systems, while increasing efficiency, remain consumers of energy, while the hydraulic system contains matter that can be transformed into energy, exploiting, as mentioned above, the energy of the position of the water positioned at the top compared to that positioned below, without dispersing the water. Furthermore, if a hydraulic system is coupled to a pneumatic and mechanical system, a single, even more complete system can be created which contains other matter that can be transformed into energy, such as compressed air. In fact, even compressed air has a positional energy compared to uncompressed air. The skill of the designer of the mechanical and pneumatic hydraulic scheme is to make the most of the principles and technologies that do not waste energy, transferring them from one system to another.

Obviously, consuming a small part of the energy produced for

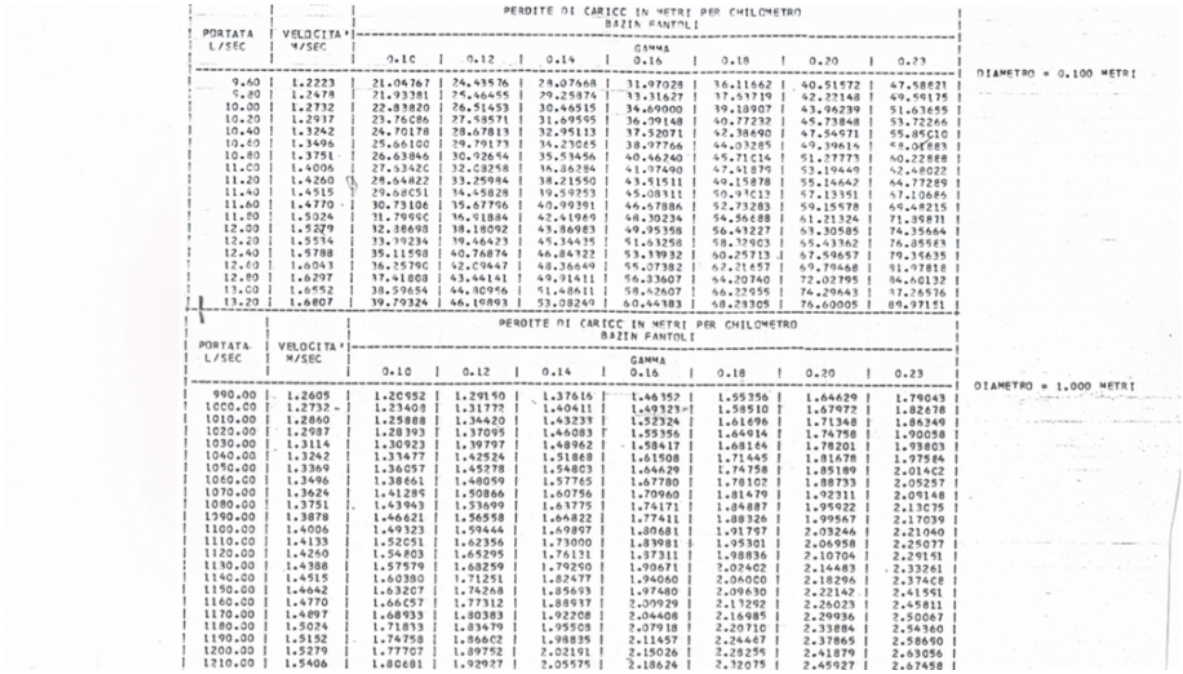
water recycling, including that which passes through a turbine and is reinserted into the recycling circuit by a suction mouth of the dual-fuel pump. Another small energy consumption is required by the restoration of the compressed air cushion which requires the dissolution of the gases in water. But these are small consumptions compared to the energy transformed without the use of fuels. The compressed air system is described in detail in chapter 9.

Considering that current technology allows the construction of multistage pumps with heads up to 100 bar (1000 m), as written in chapter 5, we can use the pump bodies of current multistage pumps (to resist hydrostatic pressure) but couple them differently using only the first and last stages, saving both in the power absorbed for lifting, and in the construction of the pumps, and in the construction of the motors.

To help understand the extent of the energy saving, a table is attached below showing the pressure drop of the pipes calculated with the Bazin-Fantoli formula: (1,000*4*V2/C2*D) where (C= 87/(1 +2g/√D). From this table we can find the pressure drops of a thousand meters of pipes with different flow speeds and different roughness coefficients (gamma coefficient) most used in hydraulic calculations only two diameters to set the reasoning Dn 100 and Dn 1000. If we analyze a flow speed of approximately 1.5 m/s for both dimensions, we can note that since the power absorbed by a pump is equal to Q*h, we can consider the pressure drops shown in the table, such as the head “h” necessary for a pump to lift the same quantity of water. The energy ratio between the recycled water (which does not require lifting) and the water raised at atmospheric pressure, in the two cases examined is the following:

in the case of the Dn 100 pipe (with a flow rate of 11.8 l/s) it is equal to 48.3 / 1048.3 = 0.0460 = 4.6% of the power necessary for lifting;

in the case of the Dn 1000 pipe (with a flow rate of 1180 l/s) it is equal to 2.079 / 1002.079 = 0.002074 = 0.02074% of the power needed for lifting.



PERDITE DI CARICC IN METRI PER CHILOMETRO
BAZIN FANTOLI

PORTATA L/SEC	VELOCITA' M/SEC	GAMMA 0.10	0.12	0.14	0.16	0.18	0.20	0.23
9.60	1.2223	21.04767	24.43576	28.07668	31.97028	36.11662	40.51572	47.58821
9.80	1.2478	21.93381	24.46455	29.25874	33.31627	37.63719	42.22148	49.59175
10.00	1.2732	22.83820	26.51453	30.46515	34.69000	39.18907	43.96239	51.63655
10.20	1.2987	23.76086	27.58571	31.69595	36.09148	40.77232	45.73848	53.72266
10.40	1.3242	24.70178	28.67813	32.95113	37.52071	42.38690	47.54971	55.85010
10.60	1.3496	25.66100	29.79173	34.23065	38.97766	44.03285	49.39616	58.01883
10.80	1.3751	26.63846	30.92654	35.53456	40.46240	45.71014	51.27773	60.22888
11.00	1.4006	27.63420	32.08258	36.86284	41.97490	47.41879	53.19449	62.48022
11.20	1.4260	28.64822	33.25984	38.21550	43.51511	49.15878	55.14642	64.77289
11.40	1.4515	29.68051	34.45828	39.59253	45.08311	50.93013	57.13351	67.10686
11.60	1.4770	30.73106	35.67796	40.99391	46.67886	52.73283	59.15578	69.48215
11.80	1.5024	31.79990	36.91884	42.41969	48.30234	54.56688	61.21324	71.89871
12.00	1.5279	32.88698	38.18092	43.86983	49.95358	56.43227	63.30585	74.35664
12.20	1.5534	33.99234	39.46423	45.34435	51.63258	58.32903	65.43362	76.85583
12.40	1.5788	35.11598	40.76874	46.84322	53.33932	60.25713	67.59657	79.39635
12.60	1.6043	36.25790	42.09447	48.36649	55.07382	62.21657	69.79468	81.97818
12.80	1.6297	37.41808	43.44141	49.91411	56.83607	64.20740	72.02795	84.60132
13.00	1.6552	38.59654	44.80956	51.48611	58.62607	66.22956	74.29643	87.26576
13.20	1.6807	39.79324	46.19893	53.08249	60.44383	68.28305	76.60005	89.97151

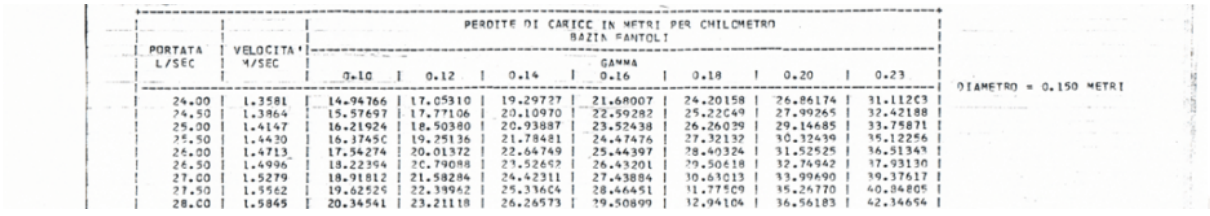
DIAMETRO = 0.100 METRI

PERDITE DI CARICC IN METRI PER CHILOMETRO
BAZIN FANTOLI

PORTATA L/SEC	VELOCITA' M/SEC	GAMMA 0.10	0.12	0.14	0.16	0.18	0.20	0.23
990.00	1.2605	1.20952	1.29150	1.37616	1.46352	1.55356	1.64629	1.79043
1000.00	1.2732	1.23408	1.31772	1.40411	1.49323	1.58510	1.67972	1.82678
1010.00	1.2860	1.25888	1.34420	1.43233	1.52324	1.61696	1.71348	1.86349
1020.00	1.2987	1.28393	1.37095	1.46083	1.55356	1.64914	1.74758	1.90058
1030.00	1.3114	1.30923	1.39797	1.48962	1.58417	1.68164	1.78201	1.93803
1040.00	1.3242	1.33477	1.42524	1.51868	1.61508	1.71445	1.81678	1.97584
1050.00	1.3369	1.36057	1.45278	1.54803	1.64629	1.74758	1.85189	2.01402
1060.00	1.3496	1.38661	1.48059	1.57765	1.67780	1.78102	1.88733	2.05257
1070.00	1.3624	1.41289	1.50866	1.60756	1.70960	1.81479	1.92311	2.09148
1080.00	1.3751	1.43943	1.53699	1.63775	1.74171	1.84887	1.95922	2.13075
1090.00	1.3878	1.46621	1.56558	1.66822	1.77411	1.88326	1.99567	2.17039
1100.00	1.4006	1.49323	1.59444	1.69897	1.80681	1.91797	2.03246	2.21040
1110.00	1.4133	1.52051	1.62356	1.73000	1.83981	1.95301	2.06958	2.25077
1120.00	1.4260	1.54803	1.65295	1.76131	1.87311	1.98836	2.10704	2.29151
1130.00	1.4388	1.57579	1.68259	1.79290	1.90671	2.02402	2.14483	2.33261
1140.00	1.4515	1.60380	1.71251	1.82477	1.94060	2.06000	2.18296	2.37408
1150.00	1.4642	1.63207	1.74268	1.85693	1.97480	2.09630	2.22142	2.41591
1160.00	1.4770	1.66057	1.77312	1.88937	2.00929	2.13292	2.26023	2.45811
1170.00	1.4897	1.68933	1.80383	1.92208	2.04408	2.16985	2.29936	2.50067
1180.00	1.5024	1.71833	1.83479	1.95508	2.07918	2.20710	2.33884	2.54360
1190.00	1.5152	1.74758	1.86602	1.98835	2.11457	2.24467	2.37865	2.58690
1200.00	1.5279	1.77707	1.89752	2.02191	2.15026	2.28255	2.41879	2.63056
1210.00	1.5406	1.80681	1.92927	2.05575	2.18624	2.32075	2.45927	2.67458

DIAMETRO = 1.000 METRI

The notable difference between the two ratios, given the same flow speed, is due to the greater contact between the flow rate and the walls of the tubes that exists in smaller tubes. But even in such cases, less advantageous, regardless of the technical advantages (which will allow new hydraulic circuits that will lead to energy production in fixed and mobile hydroelectric plants, exploiting different hydraulic regimes, as described extensively in the relevant patent filings), the economic advantages to choose these types of pumps and systems for lifting alone are immense. In fact, from the table below, we can see that if we double the flow rate of the water, to maintain approximately the same speed in the pipe, the size of the DN 100 pipe must be increased to DN 150:



PERDITE DI CARICC IN METRI PER CHILOMETRO
BAZIN FANTOLI

PORTATA L/SEC	VELOCITA' M/SEC	GAMMA 0.10	0.12	0.14	0.16	0.18	0.20	0.23
24.00	1.3581	14.94766	17.05310	19.29727	21.68007	24.20158	26.86174	31.11203
24.50	1.3864	15.57697	17.77106	20.10970	22.59282	25.22049	27.99265	32.42188
25.00	1.4147	16.21924	18.50380	20.93887	23.52438	26.26039	29.14685	33.75871
25.50	1.4430	16.87450	19.25136	21.78481	24.47476	27.32132	30.32439	35.12256
26.00	1.4713	17.54274	20.01372	22.64749	25.44397	28.40324	31.52525	36.51343
26.50	1.4996	18.22394	20.79088	23.52692	26.43201	29.50618	32.74942	37.93130
27.00	1.5279	18.91812	21.58284	24.42311	27.43884	30.63013	33.99690	39.37617
27.50	1.5562	19.62529	22.38962	25.33604	28.46451	31.77509	35.26770	40.84805
28.00	1.5845	20.34541	23.21118	26.26573	29.50899	32.94104	36.56183	42.34694

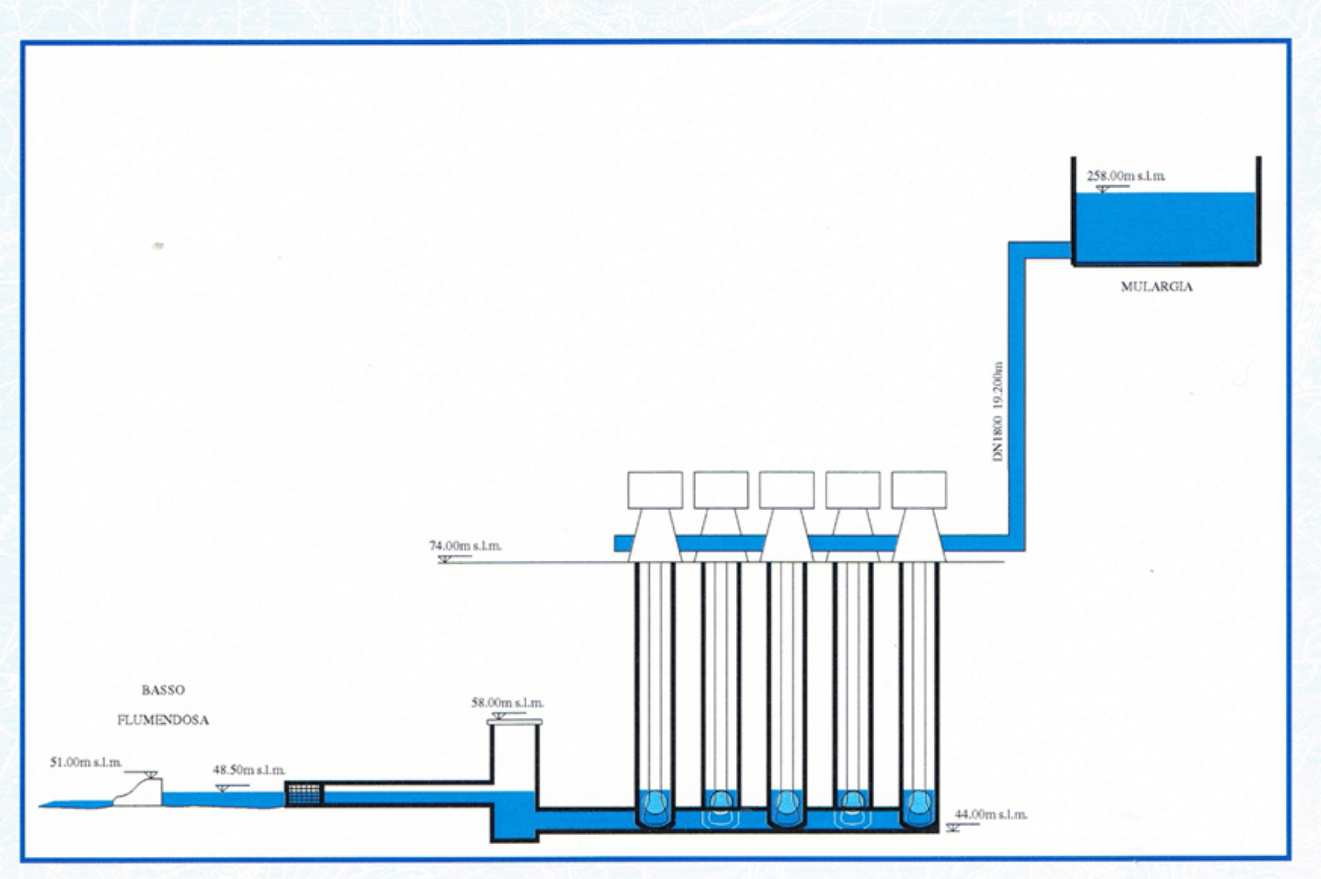
DIAMETRO = 0.150 METRI

In this case, the Dn 150 pipe (with a flow rate of 24 l/s) will have the ratio of recycled water to water raised to

atmospheric pressure equal to 21, 68 / 1021.68 = 0.02122 = al 2 .12% of the power needed for lifting.

Therefore, we can see that, by increasing the size of the pipes, while maintaining the same speed in the pipes, the pressure drops and therefore the power absorbed by the pumps decrease exponentially. The advantage becomes even more evident with large flow rates and large pipes, where pressure drops have an even less impact. In fact, in the case of the DN1000 pipe, we spend the same energy to raise 1,180 L/s of water to a height of 2,079 m or to recycle it in one kilometer of pipe.

This very simple reflection led the undersigned to modify the water lifting systems and pumps, not to contrast the law of energy conservation, but to support it. In fact, it is first necessary to design the systems, accommodating atmospheric pressure and gravity, then the machines used to create the systems are designed. The first ones that need to be changed are the current pumps, which are hydraulic operating machines which, receiving mechanical energy from an electric or thermal motor, transmit it to the liquid that passes through them to increase its pressure. This pressure, in most cases, is used precisely to overcome the force of gravity and atmospheric pressure. The figure below shows a classic water lifting system without water recycling.



The designers who design pumps, the professors who design public lifting systems, the large multinational companies specializing in large contracts, have missed some laws of physics and hydraulics, such as the principle of communicating vessels and Pascal's, which would allow to raise the waters by exploiting the greater hydrostatic pressure of the arrival basin. The system diagram above refers to one of the largest water lifting systems in Europe, which I participated in building, as a simple technical employee, in the years 2000 -2002. It includes a large water intake work from the Flumendosa river (in Sardinia) and a lifting system with five vertical pumps of 1000 L/s and head 220 m, motors with a power of 3150 kW, powered by 6000 v.

This plant, designed by the autonomous body of Flumendosa, with pumps from the Termomeccanica Company, engines from Ansaldo, built by the Impregilo company, with the electromechanical works subcontracted to the company Ing. Caccavale e C of Naples where the undersigned worked , as can also be seen from my curriculum vitae published on

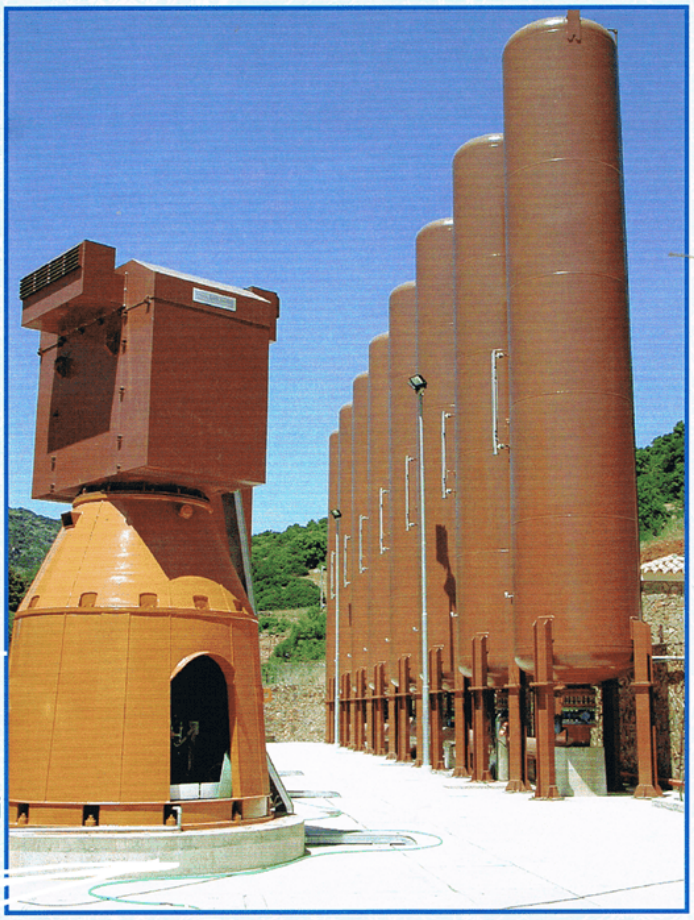
https://www.spawhe.eu. This system, in light of the reflections and subsequent experiences of the undersigned, should be redesigned, according to the hydraulic schemes and pumps that I propose. Because if it is true that it has the capacity to lift 18,000 m3/h of water to a height of 200m, it also has the capacity to consume around 15,000 Kw/h, while with the hydraulic schemes proposed below, carrying out the lifting with four steps by means of the combination of dual fuel pumps and turbines we could produce approximately. 4000 Kw/h consuming only about forty for water recycling. Furthermore, the aforementioned system involved complex calculations of the variable motion disturbances, carried out by the University of Naples and for the neutralization of this phenomenon, eight steel tanks pressurized with compressed air with a capacity of 70 m3 were necessary, with a pressure test pressure of 30bar. The cost of this system could also be avoided by creating the stepped lifting with water recycling and pumps with dual power on the suction side, as described not only herein but also in Chapters 5 and 8 of the original article.

Elettropompa

Pump	Pompa		
debit	portata	1000	1/s
heigt	prevalenza	220	m
speed	velocita	985	g/l'
height	linea d'asse	30	m
weight	peso	28.500	Kg
Motor	Motore		
power	potenza	3150	KW
voltage	tensione	6000	V
poles	poli	n.	6
protection	protezione	IP	54
weight	peso	14.000	Kg

N. 8 pressurized tanks for water hammer protection with 70 cubic meters capacity

N. 8 serbatoi pressurizzati per la protezione dal colpo di ariete con 70 metri cubi di capacità



Mine is not a criticism of the project carried out and of Italian technology, so much so that as an installation technician, I proudly participated in the creation of this work. But knowing that there are many thousands of water risings of all kinds in the world, I think it was useful to reflect calmly on these works, as a pensioner. Because public bodies, large contracting companies, universities consider the state of the art of lifting systems to be acquired and do not look for alternative solutions, instead, the creativity combined with the experience of those who have seen many systems built, even carrying out modest roles , can lead to the development of alternative solutions, which cannot be rejected without any discussion. The problem is how to convince large public bodies, large companies, universities, that they may have got the solutions wrong without hurting their professional pride. The problem is not local but global.

I think the stakes are so high that personal pride must be put aside. Everyone can make mistakes, especially myself, who cannot compare with anyone and cannot spend a few thousand euros on experiments, but it is worth trying these solutions. A pensioner’s reputation is worth very little. Those in power who underestimate these solutions are at greater risk

What I want to say with this publication is the fact that in the Bargi power plant I did not notice any of the sustainability criteria of the interactive hydroelectric design between water and atmospheric air and I did not even notice any protection device from water hammer which is certainly the main cause of the destruction of the hydroelectric power plant. Instead, protection against water hammer is very present in the water lifting system designed, designed by the autonomous body of Flumendosa, with pumps from Termomeccanica, motors from Ansaldo, built by Impregilo, with the electromechanical works contracted to the company Ing . Caccavale and C of Naples where the undersigned worked. In fact this system, which raises 5000 l/s to a height of 200 m, which as a retired inventor I have criticized because it consumes a lot of energy unnecessarily, is at least well protected against water hammer by eight 70 m3 pressurized tanks with compressed air with nominal pressure of 30 bar. It is very strange that a hydroelectric power plant that exploits a hydraulic head of 375 metres, with flow rates of 104.6 m3/s (376,560 l/sec) and which works in both flow directions, has no protection against water hammer. Furthermore, in the lifting station, with much lower flow rates and operating pressures, we have five pumps, which are put into operation one at a time and stopped one at a time, precisely so as not to produce various motion disturbances in the lifting pipeline. However, as I wrote above, I also consider the plant built in Sardinia to be wrong, although it was well protected against water hammer, since, as demonstrated by the undersigned, by building the plants with submerged or compressed hydroelectromagnetic energy, we we can also produce

energy by raising the water, with step lifting and feeding the subsequent basins with the water that comes out of the overflow. Therefore we do not need the hydraulic head to produce electricity and by raising the water in this way, we do not even produce water hammer, as the water always remains within the system that produces energy. What comes out of the plants is only the electricity and the water that is discharged from the overflow drains for agricultural, civil and industrial uses.

Of the Bargi hydroelectric plant which produced 330 MWh at a high cost, all we can say is that it is one of the many wrong plants that have fueled the Italian public debt. It is a coincidence that it was demolished by a water hammer in the year 2024 because it could have happened much earlier. I only feel sorry for the workers who died and their families. Making the turbines turn backwards to raise the water may seem like a brilliant idea but it is not. Or rather, it is a solution acceptable only from an electromagnetic point of view as an alternator can also function as an electric motor. From a hydraulic point of view, things work very differently as the turbine, designed with very high efficiency to exploit the kinetic energy of the water in the natural direction of the flow exiting the turbine, greatly lowers the efficiency when it rotates in the opposite direction to raise the waters. Personally, I only know about the Bargi power plant what I read in the newspapers and the photos published before the disaster. But this is enough to make me understand that this system is completely wrong from a hydraulic point of view because the lifting and distribution of water has been the main work I have done in my life as a system installer technician and above all as an inventor unwanted by public bodies and by multinationals. In fact, neither public bodies nor multinationals have financed my forty inventions on these topics. In the Bargi power plant, the water from two artificial lakes connected to each other is exploited: Lake Brasimone, higher up than the power plant, and Lake Suviana.

The water of Lake Brasimone passes through a tunnel 4,757 meters long, with a diameter of 5.4 meters, built into the mountain. The tunnel ends in Stagno where the water is introduced into two parallel forced conduits of approximately 4 meters in diameter, for a flow rate of 104.6 cubic meters per second, which reach the power plant to operate the turbines and produce energy. When the demand for electricity from the grid is lower, the plant managers took advantage of this to operate the turbines in pumping mode: pushing the water into the pipes up to Lake Brasimone with a flow rate of around 47 m3/s, which compared at the descent rate of 104.6 m3/s it is much lower. This demonstrates the low efficiency of the turbines in the lifting phase, but also the high energy cost of water recovery. But above all, the serious risk of having a water hammer in the two penstocks in the lifting phase due to the interruption of the current of the turbine motors which function as pumps. The situation is aggravated by the fact that compressed air tanks to cushion water hammer were not provided and by the fact that the power station was built submerged in water. Therefore, even if only one of the two lifting pipes fails, the power station is forced to flood completely, destroying all the electrical management and control equipment of the system.

The good intention of recovering water for energy purposes has caused immense damage. I am not surprised at the severity of this damage and even more serious ones such as the collapse of dams and floods due to the overflowing of artificial reservoirs in the mountains. For these reasons I proposed the production of submerged and compressed hydroelectromagnetic energy without the hydraulic jump that the entire terrestrial science pretended not to understand and consequently, not even the politicians who govern did not understand it, including the Italian ones who governed from 2010 to 2024. Years in which I proposed these alternatives.

Water must not be wasted, but used in other hydroelectric

energy producing plants that are more modern than the current ones, which do not require hydraulic jump, do not consume fuel and do not produce water hammer. These plants which would have produced submerged hydroelectric energy were proposed in 2014 without finding public and private interlocutors (including Enel and Enea). Only due to fortunate circumstances did the water hammer at the Bargi power plant not occur until 04.10.2024. Unfortunately, luck does not last forever. Sooner or later this accident had to happen, more serious than other accidents of the same type as the hydroelectric plant was designed with the turbines placed at a depth of forty meters precisely to exploit the hydraulic head of the water in the lifting phase. Designing a plant of this type without the protection of pressurized tanks with compressed air was authentic technical and scientific folly, of which Italian science cannot be proud and should assume its responsibilities. While all terrestrial science should have understood that on planet Earth electrical energy can be extracted everywhere, even at the poles and in deserts without the need to build hydroelectric, thermal, nuclear power plants and without the need to transport energy from a placed on another in the form of fuels (except in rare cases) or electricity. Water must never be raised against the gravitational force but pumped in the direction of the gravitational force to produce energy through turbines or pumps used as turbines (powered in reverse) compared to current use. Only in this way is it possible to produce cold electricity which would allow the Newtonian and Lorentz thrust to be added together and also create sustainable and non-polluting aeronautical and space systems. The entire world of science must also answer for this. But this is another topic that does not concern the Bargi power plant. It concerns the entire earth’s energy.

Luigi Antonio Pezone

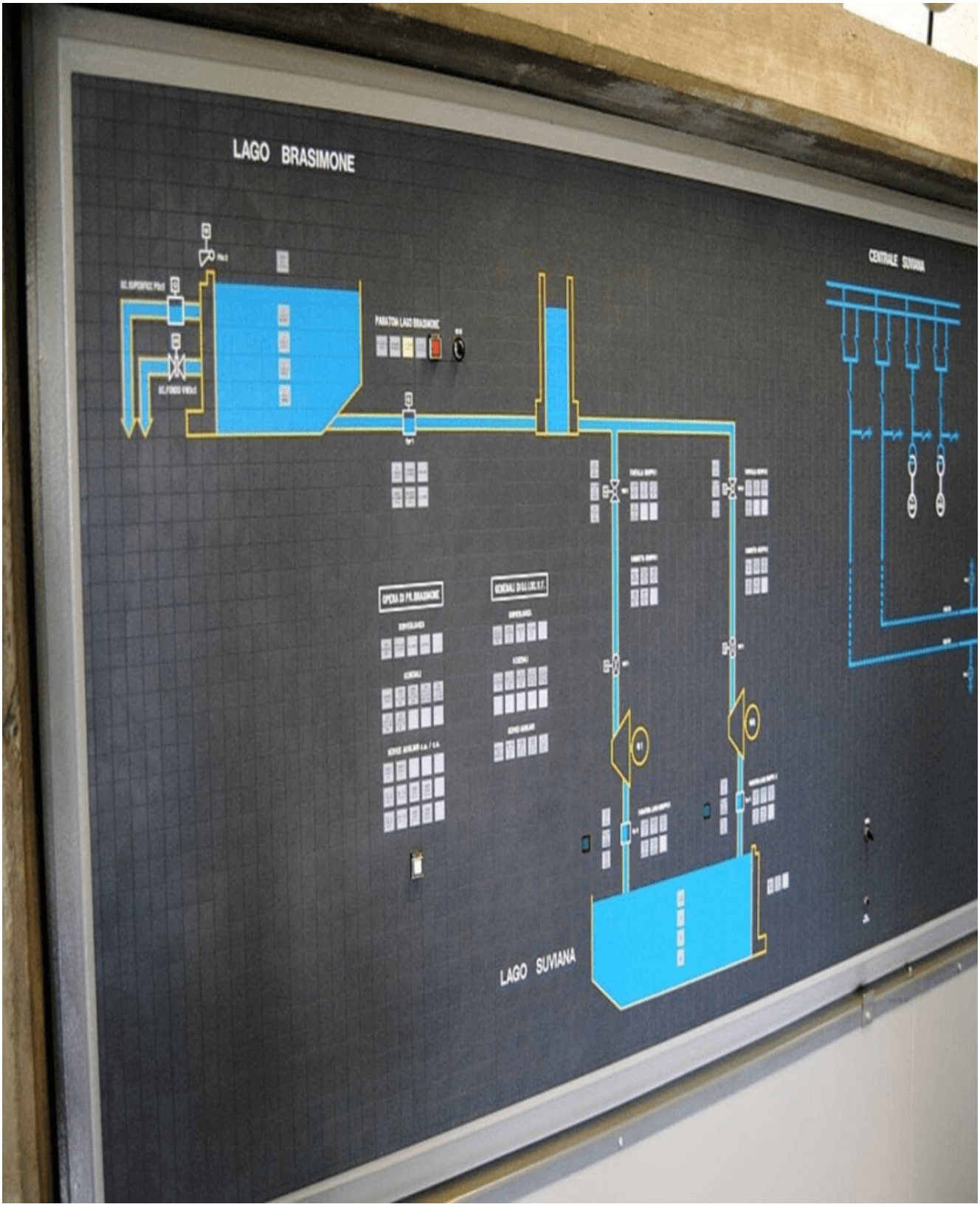
SECOND PART OF THE PUBLICATION

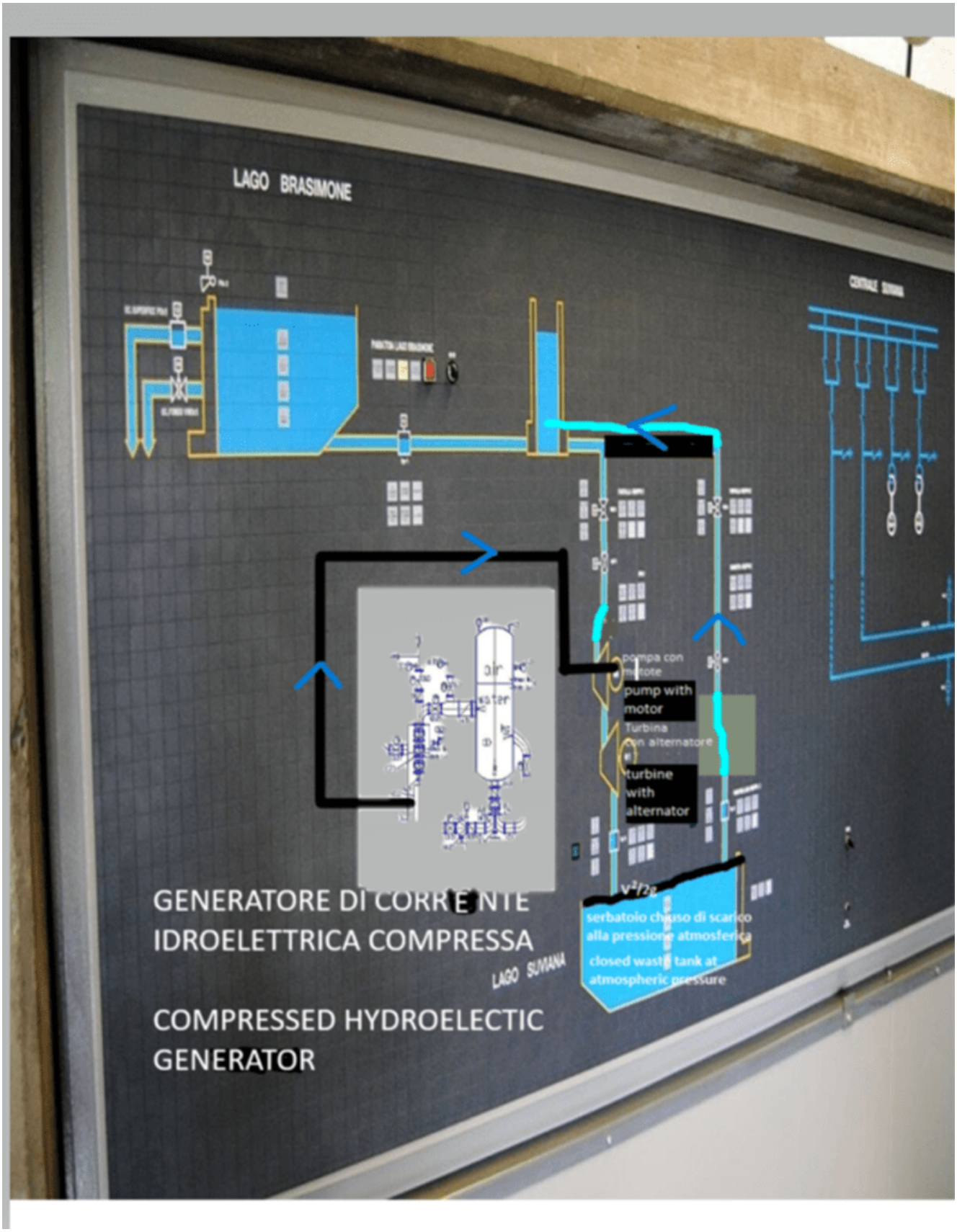
How can what remains of the hydroelectric plant linked to the Bargi power plant be saved?

Criticizing with hindsight the design work of other designers after a disaster of this proportion may seem easy but we must also ask ourselves what can be saved from the great works already completed?

Let’s start from the synoptic table of the existing system already published in the previous pages and try to modify it with a constructive criticism, considering that this system was put into operation in 1970. Many technical updates have certainly been made for the electrical management of the system, but the imposing hydraulic work certainly has not undergone any changes. Below is the hydraulic scheme of the current plant and its modification to produce hydroelectric energy all year round without dispersing the water, avoiding the risk of producing the water hammer again which probably destroyed the current hydroelectric plant. If this was not the cause of the disaster, this danger is still a serious threat with the current way of managing this

Plant.


LAGO BRASIMONE
CENTRALE SUVIANA
LAGO SUVIANA



From the comparison of the two figures above it can be understood how the majority of the civil and hydraulic works already completed could be saved by transforming the current

hydroelectric plant with the hydraulic jump into a submerged hydroelectric plant without the hydraulic jump with the recycling of the water autonomously energetically which can operate 365 days a year, 24 hours a day, except for stops for extraordinary maintenance.

The accident at the Bargi power plant took me back ten years, to 2014, when, after nine years of activity as an inventor, thirty-seven years of work as an installer of industrial and environmental anthropic systems, fighting against the commercial solutions of multinationals and the great wrong purification and energy works of global public bodies, I also came to the conception of submerged hydroelectric energy without the hydraulic jump. These large institutions, instead of cleaning fossil energy by producing carbonates in the water (as the undersigned proposed), made large investments to hide CO2 underground (including the Italian Enea and Eni who officially rejected my solutions, as I written in other published articles) investing billions of dollars in the C.C.S. system. Instead, the undersigned, seriously trying to clean up fossil energy, realized that there were other cheaper and cleaner ways to produce energy. In fact, I realized that by turning the centrifugal pumps upside down and making them work in the direction of the gravitational force coupled with the turbines, instead of raising the waters, we could extract clean electrical energy directly from the terrestrial environment, without extraction, transport, industrial transformation and energy distribution.

Why has this solution never been talked about in the whole world after ten years? This question certainly cannot be answered by the undersigned who has done everything he could to communicate with the world’s centers of power, including the creation of the website https://www.spawhe.eu, open to all and where everyone can download the publications.

As the Bargi power plant demonstrates, Italian and global public bodies have never thought of making the pumps work in

the direction of the gravitational force, nor of creating such a coupling. They still haven’t done it after ten years, although the undersigned has continued to work alone on this topic, without money to invest and in the world’s scientific, political and entrepreneurial indifference, always coupling pumps and turbines (or pumps used as turbines) together. , which perform different but interactive fluid dynamic and energetic functions, in fixed and mobile systems capable of extracting electrical energy at the temperature of the terrestrial environment from atmospheric air and terrestrial water.

After ten years, in 2024, no global public body has still believed in my solutions, and today I feel the duty to propose, without anyone having asked me, the same solution applied specifically to the Bargi plant to recover what can be saved from the immense investments mistakes made by Italian science in the name of the Italian people who have one of the highest public debts in the world, although Italian families are among the biggest savers in the world. The designers and managers of this plant, continuing to keep the functions of the pumps and turbines separate, did not realize that we could produce energy even without the hydraulic jump, keeping the Suviana and Simione basins always full of water, discharging only the water excess rainwater from overflow drains, exploiting the positional energy of the surface waters of the upper Simione basin compared to the waters of the lower Suviana basin for 24 hours a day and 365 days a year.

As I have shown in many publications, including this one, in order to exploit the energy of position it is necessary to intubate the water from the surface and overcome the state of inertia with a downward-oriented pump equipped with an electric motor that absorbs little energy, not having to raise the waters. It doesn’t take long to understand that this current absorption decreases as the water acquires kinetic energy. In order to be transformed into electrical energy,

this kinetic energy must be slowed down in the turbine wheel below, which, connected to the alternator shaft, produces the electrical current as happens with the hydraulic jump. It is obvious that the current absorbed by the pump motor is much lower than the electric current produced by the alternator which is in a lower position and exploits not only the upper hydrostatic head, but also the energy already supplied by the pump motor. Certainly, the energy production is lower than the operation of two turbines of the same size working in parallel and exploiting the hydraulic jump. But in my solution the water, which is a precious asset, is not wasted and large hydraulic works are not necessary, as electricity can be produced in the same water basin. Obviously, hundreds of submerged hydroelectric plants could be built in the same basin that produce energy day and night by oxygenating the water with greater efficiency, less space occupied than solar panels, and also more efficient and practical than wind turbines. But the natural evolution of submerged hydroelectricity was compressed hydroelectric energy which could be created of any size without any water basin but simple autoclaves and open tanks placed side by side which could also be mounted on means of transport. Every civilian home could produce its own compressed hydroelectric energy by always recycling the same water without connecting to the public grid and without installing solar panels which, as written, are more cumbersome, expensive and have discontinuous energy production. With compressed hydroelectromagnetism and variable speed motors we can decide at the moment the quantity of clean energy to extract from the environment in every corner of the earth because the indispensable raw materials are the gravitational force, atmospheric air and water which, in addition to being the ideal energy carrier also has very important electromagnetic capabilities which are not used in anthropic systems designed by men, but nature uses them very well. Current technological development has not noticed anything, but indirectly, it has developed good technologies which with small adaptations, particularly regarding the way

of using pumps and autoclaves, could solve the current environmental and energy problems in just a few years. Unfortunately, it seems that the Creator of the universe makes fun of the powerful men of the Earth and of the great scientists and reveals some important and strategic messages to simple people like myself, who is not a Nobel Prize winner, a great politician, economist, a professor . He has no degree in a specific subject. He is only a developer of industrial and environmental purification and energy plant details who, as a pensioner, has tried to think, without being pressured by the needs of satisfying employers to impartially seek the best solutions from a scientific, technological and organizational point of view of work. Without expecting any compensation or medal for civil valor.

In the specific case of the Bargi power plant and all the connected works, while respecting the correct intuition that a turbine can also be used as a pump, as shown in the diagram of the power plant modified by the undersigned, above all, in a large plant like the one of Bargi, one cannot think of absorbing the large amount of energy necessary from the external network thinking that during the night hours there is less current absorption by other users. If the designers made this choice, they will evidently have made calculations, knowing the potential of the other existing power plants in the area. If these potentials have decreased due to other electrical absorptions powered by the same network, or some other power plant is down for maintenance, it is clear that the Bargi power plant risks serious interruptions to the electricity supply and dangers from water hammer towards which the power plant is not protected, but was actually built submerged in water.

With hindsight, many considerations can be made, but we must ask ourselves why, on a global level, there was this immense gap in global energy production? When right at the beginning of the industrial era there was the publication of Albert

Einstein’s relativity, which made all men dedicated to science and technology understand the importance of Earth’s gravity, above all, in energy applications. In fact, atmospheric air is the first form of compressed air and has been compressed to a pressure of one bar by the gravitational force, which exploits it in one direction. Atmospheric air is an immense and powerful energy accumulator that does not run out or lose its charge, like electric energy accumulators.

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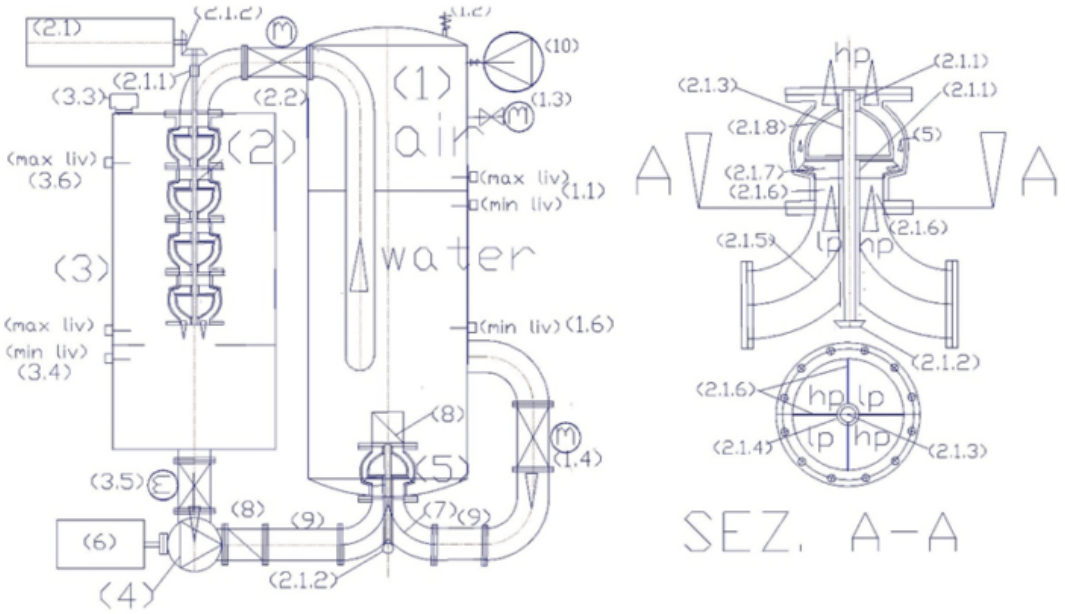
With my invention of compressed hydroelectric power, it is possible to further increase the kinetic energy of the water that passes through the underlying turbine, increasing the rpm of the engine that powers the turbine which functions as a pump as if it were working with a hydrostatic head much higher than that permitted by Lake Brasimone, but without absorbing any energy from the area’s electricity distribution network. Indeed. as can be seen in the figure of the modified hydroelectric power plant, the two turbines placed in series on the same water descent pipe have also been joined by a power generator capable of providing the starting point to the electric motor that powers the turbine used at the pump tops for do not depend on power supplies external to the hydroelectric plant. This power generator, shown in the figure below, is the one that the undersigned designed to power the

means of transport with the compressed hydroelectromagnetic system, completely energetically autonomous which extracts energy from the environment simply by opening a valve that lets the pressurized water come out from the compressed air that powers a pump used as a turbine connected to a power generator which in turn powers the water circulation motors of the own plant and the larger one of the Bargi hydroelectric plant.

http://www.spawhe.eu/the-energetic-miracles-of-pumps-with-separated-double-supply-until-to-the-impeller/



PRESSURISED RECIRCULATING HYDROELECTRIC GENERATOR FOR INDEPENDENT MOTORIZATION WITHOUT FUELS OF AUTO, TRUCKS, BUS, TRAINS, SHIPS, AIRCRAFT.

Legend : (1) autoclave pressurized tank; (1.1) level regulator with capacitive probes; (1.2) safety valve; (1.3) manometer with shut-off valve; (1.4) motorized valve flow control with position transmitter; (1.5) pressure or flow transmitter; (1.6) minimum level probe in the start system; (2) pump used as a turbine (pat); (2.1) alternating current generator; (2.1.1) bushing with sealing ring; (2.1.2) angle diverter with conical gears; (2.1.3) transmission shaft; (2.1.4) transmission shaft protection tube (2.1.5) double curve with septa crossed separators in low pressure (LP) and high pressure (hp); (2.1.6) septa separators of flow; (2.1.7) closed type; (2.1.8) Diffuser of the pump; (2.2) motorized valve to supply turbine with flow adjustment; (3) water transit tank at atmospheric pressure and containment pat; (3.1) motorized valve to feed pressurized water network; (3.2) motorized valve bypass supply at low pressure; (3.3) air valves; (3.4) Water level control with capacitance probes; (3.5) motorized valve for water supply at low pressure; (3.6) maximum level probe in the start system; (4) electric pump to supply in low pressure (5) electric pump with double separate supply until the impeller; (6) pump drive motor, with variable speed, controlled by an inverter; (8) check valve. (9) flow diverter stub pipe; (10) electrocompressor;

Unfortunately, we cannot simultaneously fight against science which does not admit its mistakes, entrepreneurs who have an interest in persevering in the technologies in which they have invested, and above all against politicians and economists who, not having scientific and technological skills, believe more to public and private science, which together have produced global warming, also favored by international legislation on patents, even entrusted to the United Nations,

which should be impartial. The WIPO (world international property organization) demands the same taxes from private inventors that it demands from multinationals that only produce commercial inventions, instead of financing the experimentation of public social utility solutions in the interests of the entire world population. Unfortunately, we cannot simultaneously fight against science which does not admit its mistakes, entrepreneurs who have an interest in persevering in the technologies in which they have invested, and above all against politicians and economists who, not having scientific and technological skills, believe more to public and private science, which together have produced global warming, also favored by international legislation on patents, even entrusted to the United Nations, which should be impartial. The WIPO (world international property organization) demands the same taxes from private inventors that it demands from multinationals that only produce commercial inventions, instead of financing the experimentation of public social utility solutions in the interests of the entire world population. I think that Tesla was the greatest inventor of electricity and electromagnetism of all time, followed closely by Maxwell, Lorentz, Marconi, Ferraris, Pacinotti and many others. Unfortunately, even Tesla, like Albert Einstein and the current Nobel Prize winners, underestimated the Earth’s fluid dynamics which is equally important and even easier to understand, if the right reflections are made. I don’t know that on planet Earth even today governments and multinationals have spent a few euros for testing the forty inventions of the undersigned that starting from the cleansing of fossil energy, only by assuming that all the inventions work perfectly, gradually, virtually, I have eliminated global warming, I also went to space and came back without fuel and nuclear energy. I know well that there is a difference between saying and doing. For this reason I have only published my solutions, without ruining my existence as happened to Nikola Tesla, who I take the liberty of naming even though I do not believe I belong to the

category of geniuses, but to that of an ordinary technical employee who loved his job until to the point that he continued to do it as a pensioner, entrusting himself with tasks that his employers would never have entrusted to him. As they say, you don’t look a gifted horse in the mouth. It is up to the world ruling class whether to accept the gift or continue to refuse it, as he has always done. In the Bargi power plant I put together two different systems that today do not exist at the state of the art because both public and private science did not want to build them without giving the inventor any explanation. However, having already said that the entire ruling class has never financed and experimented with the entire SPAWHE nursery rhyme, at least for myself, until proven otherwise, I can believe that anything is possible. This means that we can put multiple compressed systems in series to increase the operating pressure while maintaining the characteristics of an open hydraulic system and we can put multiple open hydraulic systems in parallel to multiply the flow rates. If we assimilate the pressures to the voltage and the flow rates to electric currents we can create very powerful systems by extracting energy directly from the air and water at the temperature of the earth’s environment, which have no economic production and marketing costs.

Water must never stand still in industrial, urban, domestic, agricultural, sewage and purification plants because as it circulates it purifies itself and produces energy. When we have to consume water, from industrial and agricultural plants and from civil homes, we always have to take it from the overflow of an open circuit producing electricity, which automatically takes the same quantity from the plant to which it is connected upstream. of water consumed, or transferred to industry, agriculture or civilian homes. Therefore, the world energy system, with rare exceptions, should be unique, always based on the circulation of water at the temperature of the terrestrial environment, which even when it leaves the circuit, continues to carry out its electromagnetic function

through natural ion exchange for the purposes purification, biological renewal of organic matter, organic and inorganic chemistry.

God gave men free will, but if he behaved like an employer entrepreneur, he would have had to fire the entire ruling class, political, scientific, economic, because they did not know how to choose the best solutions to use from a global point of view for the conservation of the planet that has been entrusted to us, not given away.

If, with hindsight, the capitalist and communist world ruling class made the right reflections, going into the details of the processes necessary to clean the earth's environment from the pollution produced by the current way of producing energy and also the insufficiency of the current purification systems, should agree with the undersigned, that after a lifetime of work in the design and installation of systems in the automotive industry (which is the most complete industry varies in terms of technology, automation and work organization) and of industrial, urban purification, water lifting and distribution plants (which are the systems through which men use and return water and air to the terrestrial environment) has decided to spend the third part of his life meditating and study the necessary corrections to industrial and environmental systems with strategic inventions that have escaped public and private science since industrial development began.

I felt the duty to intervene in the Bargi power plant disaster by proposing my solution to save what could be saved from the existing plant, although my solutions are completely different from the construction of large public works for the transport and production of energy. In fact, I believe that on planet Earth the large hydraulic works, the large thermal power plants, the large energy distribution networks are counter-productive for the environment and the global economy, since thanks to the Earth's gravitational force, the energy it is

everywhere, especially in the form of terrestrial water and air, therefore energy and purification systems must be small and interactive in fixed and mobile versions. This is the main reason why the world ruling class, including the scientific one, has created global warming and is also getting the wrong solutions to fight it.

Faced with the concrete risk that the Bargi power plant will be repaired and put back into operation with the same defects without modifying it with immense public investments, as a simple citizen, designer and inventor, I publicly propose my reflections to those who will have to investigate the causes of the disaster and to those will be delegated to reconstruction.

The question I asked myself, starting from the assumption that the Italian ruling class does the same, is the following: What can be done to recover what can be saved from the investments made in the Bargi power plant and the large hydraulic connections between the artificial reservoirs of Suviana and Brasimone connected to the hydroelectric power plant?

This answer exists but has not reached the experimental stage due to the indifference of the ruling class towards these problems. We can also find it in Spawhe’s nursery rhyme, where I write: that by replacing the upper tank of a basin with an autoclave pressurized with compressed air, provided that a turbine connected to the autoclave outlet is used, we can recover the water discharged from the turbine and insert it again into the autoclave, whose pressurized water is recycled with the same pump impeller via the second supply. In this way, with the same water and the same compressed air we would have produced a rather small-sized power generator that extracts energy from the environment.

This solution, which is called “compressed hydroelectric”, is important, above all, in the initial phase of the energy process of a hydroelectric power plant. Which must provide

energy to the electricity grid, not absorb it from the electricity grid to raise the water which in the next phase must produce hydroelectric energy which powers the electricity grid itself. In fact, it is the compressed air that must circulate the water in the turbine in the initial phase of electricity production to autonomously start energy production without absorbing it from an external electrical network. Especially in a large plant like the Bargi power plant, one cannot rely on the public electricity grid.

This “compressed hydroelectric” plant, which in the modified plant I reported separated from the flow line of the water coming from the Brasimone basin, serves to power the electric motor of the turbine used as a pump, which powers the twin turbine which continues to be connected to your alternator. Therefore, this solution could be said to halve the energy potential of the hydroelectric plant, going from 354 GWh to 172 GWh. In reality, the power of the plant could be around 250 GWh. But it would solve a lot of problems. Mainly the danger of water hammer. Furthermore, the power produced by the only alternator in operation would increase as the electric motor of the turbine used as a pump would give greater kinetic energy to the water, as if the hydraulic head were not 375 meters but approximately 500 metres. Only by making more precise calculations can we actually know the energy gain.

The fundamental aspect of this solution is the fact that no one wants to produce the energy produced with the compressed hydroelectric system on planet Earth, just as no one wants to turn a pump upside down to make it pump in the direction of the gravitational force. In other words, on a global level, on planet Earth no powerful person on Earth with related scientific consultants wants to use compressed air and gravitational force as a source of energy and water as a physical and electromagnetic energy carrier.

In this constructive criticism of the profoundly flawed hydroelectric plant of Bargi, I have included the one-way

exploitation of the compressed air in the autoclave, which, through the current generator that powers a pump motor, allows the use of a higher hydraulic head to that allowed by the difference in height between Lake Suviana and Brasimone, continuing to maintain constant the pressure of the autoclave fed at the same time by the water discharged from the turbine which produces the starting current of the main hydroelectric plant which will continue to produce energy with the two main turbines mounted in series, rather than in parallel, to operate 24 hours a day without wasting water or energy. This modification would be sufficient for the alternator connected to the turbine to produce a much higher quantity of electrical energy than that absorbed by the electric motor. But the most important aspect that escapes the current world ruling class is the fact that compressed hydroelectric energy is extracted by gravitational force through the use of compressed air and natural water. In fact, in a system open to atmospheric pressure, completely full of water, the water does not circulate. The electric motor of the pump that pumps in the direction of the gravitational force does not serve to lift the water but to extract electrical energy from the environment without using fuels and high voltage electrical networks equally produced with thermal power plants that use fuels that produce CO2 or nuclear power plants that produce radioactive waste and steam with obvious environmental and economic disadvantages.

To extract energy from the environment it is first necessary to overcome the state of inertia which in a system open to atmospheric pressure, without pumps and turbines, is stable due to the principle of conservation of energy and communicating vessels. If I don’t want to use the hydraulic jump which works one way wasting the water and I don’t want to spend fossil or nuclear energy to raise the water back to the upper basin it is necessary to invent a better solution than the hydraulic jump and cheaper and cleaner than the thermal and nuclear energy. This is what inventors are for. They are

not just used to invent commercial solutions to enrich employers. But, oddly enough, the most difficult thing is to convince public science that it teaches in world schools, including universities. After ten years from the invention of submerged hydroelectricity and nine from the compressed one and many publications by the undersigned, there is still dead silence on these topics. Isn’t it obvious that by turning a ducted pump in the direction of the gravitational force, the state of inertia of the water is overcome and kinetic energy is produced? Isn’t it obvious that this kinetic energy also turns the turbine underneath, producing electricity through the alternator connected to it? Isn’t it obvious that the current produced by the alternator is much higher than the current absorbed by the engine? In fact, in hydraulic calculations to calculate the head of a pump, the positive hydraulic head on the pump axis is subtracted from the geodetic height of the system. Instead, in the case of calculating the electrical energy produced by a turbine, the entire geodetic drop contributes to producing electrical energy. This is the reason why even without the hydraulic jump, an alternator connected to a turbine always produces more energy than an electric motor connected to a pump absorbs, despite working with the same geodetic differences in height. Furthermore, it must be considered that in basins that are always full of water, the water does not absorb energy to rise. In a submerged outlet, it moves only to let the water with greater kinetic energy pass, as happens in the lower Suviana water waste tank connected to the pipeline that rises to the surface up to Lake Brasimone at atmospheric pressure. So there are excellent reasons to build hydroelectric plants without the hydraulic jump, especially if we reinforce the kinetic energy produced by the pump by continuing to power the electric motor with the energy produced through the current generator which exploits the static pressure of the compressed air contained in the autoclave that powers the power generator shown in the figure above.

The fact that in designing this plant put into operation way back in 1970, the designers did not consider the great economic cost involved in raising the water from the lower basin to the upper one and that they did not provide adequate protection against water hammer, it can, in fact, be remedied by transforming the hydroelectric plant with the hydraulic jump into a large submerged hydroelectric plant, integrated with a compressed hydroelectric plant necessary for the initial start-up and the strengthening of the static pressure for the entire process, becoming, of done, a combined system with pressurized hydraulic head in an open vessel, not subject to variable motion disturbances (water hammer) as the entire system, up to the Brasimone basin, is always full of water. The kinetic energy that produces the electric current in the alternator develops only in the downward section of pipe that feeds the expansion tank, closed but connected to the atmosphere, immersed in the Suviana basin, where it is currently located, but hermetically covered in such a way that water can rise to the surface without energy costs due to the principle of communicating vessels. Water is not lifted against gravitational force.

This system modified as described, falls within the logic of natural terrestrial dynamic fluid energy, which is the same as artesian wells and communicating vessels that exploit gravitational force. For the undersigned, science must serve to understand how the earth’s natural fluid-dynamic and electromagnetic systems work, technology must serve to strengthen natural processes to meet the growing demand of the world population. Man’s inventions must not interfere with God, not for religious but for scientific reasons that we still do not fully understand.

Isaac Newton said what we know is a drop, what we don’t know is an ocean. The presumption of the ruling class of the last one hundred and fifty years has forced scientific development and technology too much, creating incomplete inventions that

have turned everything upside down because no one has truly understood what the real primary sources of terrestrial energy are.

Science has looked for these sources underground, in the heat, in the sun, in the wind, producing fossil, nuclear, solar and wind energy. Unfortunately, as I said above, not even the great scientists of the early twentieth century, including Tesla and Einstein, realized that the cheapest and cleanest energy is the one that nature already provides us and which is everywhere (at least for me) and it costs nothing. In fact, with hindsight, today that we know that natural terrestrial electrical energy comes from the ion exchange between the earth's surface and the ionosphere, we should avoid producing not only CO2, but also steam in the atmosphere. The high voltage pylons that carry electricity should also be eliminated. Everything that did not exist in the terrestrial environment before industrial development must be designed differently and can be done with the solutions proposed by the undersigned, because energy in its potential state, thanks to the gravitational force, is everywhere and therefore we do not need to transport the energy in the form of gas, oil or even electricity. If we really want to transport high voltage electricity we must use underground cables. Because everything interferes with the natural ion exchange between the earth's surface and the ionosphere. The current way we use to produce terrestrial energy has transformed rains into typhoons and storms, and is making the snow disappear from sea glaciers and mountains. Desert areas are multiplying especially in Africa and Asia because scientists have not understood that nature has given us on a silver platter the way to extract clean energy directly from the earth's environment as I have described in recent articles:

111)19.12.2023

https://www.spawhe.eu/cop-28-science-has-not-understood-that-planet-earth-could-be-energetically-autonomous-without-fossil-

fuels-and-nucleated-energy/,
https://www.spawhe.eu/cop-28-la-scienza-non-ha-compreso-che-il-pianeta-terra-potrebbe-essere-autonomo-energeticamente-senza-combustibili-fossili-ed-energia-nucleare/,

110) 26.11. 2023

https://www.spawhe.eu/cop-28-the-usual-conference-of-global-scientific-hypocrisy-like-the-twenty-seven-previous-cops/,
https://www.spawhe.eu/cop-28-il-solito-convegno-dellipocrisia-scientifica-mondiale-come-le-ventisette-cop-precedenti/

109) 03.11. 2023

https://www.spawhe.eu/from-the-theory-of-general-relativity-to-the-general-artificial-terrestrial-interactivity-unwanted-by-governments-and-multinationals/,
https://www.spawhe.eu/dalla-teoria-della-relativita-generale-alla-interattivita-generale-artificiale-terrestre-indesiderata-dai-governi-e-dalle-multinazionali/

108) 03. 09 2023

https://www.spawhe.eu/world-governments-that-reject-the-extraction-of-clean-energy-from-the-environment-reject-a-perennial-scientific-windfall-from-the-sky/,
https://www.spawhe.eu/i-governi-mondiali-che-rifiutano-lestrazione-dellenergia-pulita-dallambiente-rifiutano-una-perenne-manna-scientifica-caduta-dal-cielo/

107) 21.06.2023

https://www.spawhe.eu/the-scientifically-disorganized-work-of-public-bodies-and-multinationals-of-planet-earth/,
https://www.spawhe.eu/il-lavoro-scientificamente-disorganizzato-degli-enti-pubblici-e-delle-multinazionali-del-pianeta-terra/

106) 24. 05. 2023

https://www.spawhe.eu/parliamo-delle-responsabilita-delle-alluvioni-e-di-altre-responsabilita-ancora-piu-gravi/,
https://www.spawhe.eu/lets-talk-about-the-responsibilities-of-

floods-and-other-even-more-serious-responsibilities/

105) 12.05.2023
https://www.spawhe.eu/flying-containers-for-rescuing-migrants-and-extinguishing-fires-without-using-fuel/,
https://www.spawhe.eu/container-volanti-per-il-salvataggio-dei-migranti-e-per-spegnere-gli-incendi-senza-luso-di-combustibili/

104) 25.01.2023,
https://www.spawhe.eu/science-and-politics-do-not-know-terrestrial-physics-and-the-scientific-organization-of-work/,
https://www.spawhe.eu/la-scienza-e-la-politica-non-conoscono-la-fisica-terrestre-e-lorganizzazione-scientifica-del-lavoro/

By carefully reading all the articles above, a development model should emerge that is completely different from the one being carried out by the current world powers, which continue to produce ever more powerful weapons and compete commercially because they copy and fear each other, avoiding impartial reasoning when entering in the details of natural physical, chemical, biological cycles and the scientific organization of industrial and environmental work. Having spent my entire working life installing systems designed by others, both industrial and environmental, as a pensioner I wanted to take the satisfaction of virtually designing them in my own way. I wasn’t surprised by the silences I collected. I would be too presumptuous to claim many enemies much honor. The truth is that they haven’t even noticed the solutions I propose because the powerful people fear and copy each other and only study strategies against their adversaries. This does not prevent me from insisting on repeating that my nursery rhyme of https://www.SPAWHE.eu condemns them all because anergy is everywhere. Instead of building large, thermal, nuclear power plants, large expanses of solar panels, wind turbines scattered everywhere which require the transport of high voltage energy, which like steam and CO2 interferes with the true electrical and electromagnetic energy exchange with he

universe, we designers and inventors of planet EARTH, should simply learn to manage the earth’s waters which are the physical and electromagnetic vector of earth’s energy at the earth’s temperature.In the following SPAWHE rhyme that I have already published in several articles as it summarizes the gravity of the current situation of a public and private ruling class that never addresses environmental problems completely and does not assume responsibilities in a collegial way. When faced with environmental disasters in particular, it allocates money for repairs, never to radically change the solutions.

Here’s spawhe’s nursery rhyme https://www.spawhe.eu.

“The cleaning of fossil energy published in https://www.spawhe.eu, to be efficient, should be based, above all on inorganic chemistry that is able to absorb CO2, producing carbonates in the water, so that they counteract the acidification of the oceans and global warming. To speed up the processes and reduce the energy costs that would have involved the circulation of very large quantities of water necessary to neutralize the very large quantities of CO2 emitted by the current thermal power plants and heat engines, it has gradually been transformed technologically into solutions of less space by exploiting the principles Pascal and Henry. In fact, I realized that on planet Earth, all the activities that nature produces through organic and inorganic chemistry, photosynthesis and the carbon cycle can be increased in speed without any need to use thermal, nuclear energy and current renewables. It is sufficient only to increase the operating pressures of the systems, modify the circulation pumps and make the machines work differently. In fact, natural interactive systems expel, with the times required by nature, the elements extraneous to natural cycles, due to accidental polluting phenomena, including direct and indirect thermal effects due to volcanic explosions, to natural fires that have always existed on the planet. The

current industrial activities of men have multiplied exponentially the elements extraneous to natural cycles, therefore nature is no longer able to restore interactive balances. Obviously, this is my truth and in the entire website, I explain how, in my opinion, we should have created global plants that purify both fumes and water at the same time before they go to pollute the soils, rivers, lakes and seas. Having not done this in any country in the world, it has not been possible to advance the state of the art of purification to make it known to other countries. Therefore, the advancement of the state of the global purification art has not occurred. Consequently, it was not even possible to notice that the water circulation pumps, if we make them work in the direction of gravitational force, by placing them in series with the turbines, we could extract the energy directly from the environment. Having not done this, it was not possible to realize that the water circulation pumps, if in addition to making them pump in the direction of gravitational force, we modify them on the suction side and make them another inlet clearly separated from the main one up to the same impeller , we can always use the same water to create energy because we use one feed to recycle the water from the upper basin and the other feed to introduce into the same impeller the water discharged from a turbine fed by falling water from the same upper basin. Not having done this, it was not possible to think that by replacing the upper basin with a pressurized autoclave with compressed air, it being understood that we use a turbine connected to the outlet of the autoclave, we can recover the water drained from the turbine and insert it back into the autoclave, whose pressurized water is recycled with the same impeller of the pump by means of the second supply. In this way, with the same water and the same compressed air, we would have produced a current generator that extracts energy from the environment, with quite small dimensions. Having not done this, it was not possible to further reduce the dimensions of this current generator by increasing the operating pressure of the autoclave in order to

be able to mount it on cars and trucks, on agricultural tractors. Not having done this, it was not possible to think that the overall dimensions can still be reduced by using submersible pumps as turbines mounted directly in cylindrical tubes that would act as autoclaves. Therefore, these groups could be used to be inserted directly into the wells to raise the water and at the same time oxygenate the aquifers which today are polluted by agricultural fertilizers, herbicides and pesticides and fecal coliforms. In fact, we know that part of the air that pressurizes the autoclave dissolves in the water according to Henry's principle, purifying the water for free. Not having done this, it was not possible to think that the overall dimensions could be reduced even further. Even miniaturized and instead of purifying the water from the wells we could purify the human blood, placing two small autoclaves side by side that would replace the right and left ventricles, creating energetically autonomous artificial hearts that would feed the systemic circuit that oxygenates the brain and the lungs to lengthen the life of the 'man. Having not done this, it was not possible to think that pressurized cylindrical autoclaves can be incorporated an external cylinder containing water at atmospheric pressure, outside of which sliding tracks of permanent magnets mounted on transmission chains driven by motors can be made electric at variable revolutions that would produce an electromagnetic flux of variable intensity which would produce induced currents in a solenoid outside the same water tank. Therefore, we could produce in this tank a linear electromagnetic thrust force according to Lorentz's law at the ambient temperature, without fuel that could be added to the reaction thrust of Newton that would be produced by propellers driven by electric motors always commanded by generators. of current that produce the primary hydroelectric energy, fed by submersible pumps used as turbines placed inside the central reservoirs. Not having done this, it was not possible to replace the current thermal turbofans of aircraft to travel in the atmosphere and in space with energy extracted directly from the environment, it was not possible to create flying

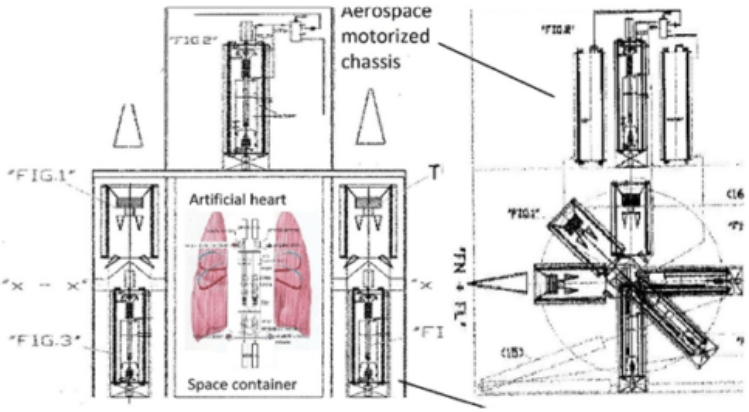
cars, nor submarines that move with the same system without fuel. It was not possible to make the ships travel without fuel, nor to mount the same system to make mobile barriers in the sea to defend ourselves from high waters. It was not even possible to think that in the space travel of the future we can add to the global linear motors an external steel tunnel connected to the turbo fan, where it will produce a higher vacuum higher than the surrounding space vacuum and connect this tunnel with a small vacuum pump to a thickening tank of the captured powders, which will be emptied periodically letting in the atmospheric air which will feed an electrostatic filter that will recover the powders that will be used together with the other interactive purification and energy plant inventions described on the website https: //www.spawhe.eu to make humans survive even in space without suffering physiological damage due to the absence of atmospheric pressure, gravity, food resources and raw materials to build spare parts for the machines necessary for survival in space. In fact, atmospheric air and water will fill the space caravan wagons full of human beings and will be endlessly recycled, suitably replenished with artificial photosynthesis and carbon cycle, while general gravity will be reinforced, becoming very similar. to the terrestrial one, electrostatically polarizing the paths of atmospheric conditioned air and recycled water in the interactive, energy and purification, compressed hydroelectromagnetic plants, still unknown to terrestrial science. Current science has forgotten that the primary fluid dynamic energy is produced by the flow rate for the pressure and density of the fluid itself. Therefore, the best solution to produce clean energy at low cost and in infinite quantities is: to use compressed air as an energy source (which is not consumed) and water as an energy carrier (which with the use of new pumps with separate double power supply up to the impeller, can recycle it indefinitely by exploiting the maximum pressure of the compressed air and the maximum density of the water at the same time. In the simple formula of fluid dynamic energy

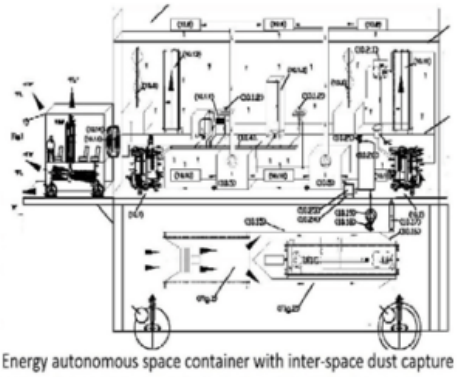
mentioned above. No heat source is needed. This is the biggest mistake in world science because water is not only the best physical and hydraulic energy carrier, it is also the best electromagnetic carrier, having the natural ability to ionize into ions (H+) and (OH-). This ability was given to her directly by nature, that is, by GOD. Excluding water from energy production means excluding physical, chemical, biological and neurological life, above all, producing energy coldly. So much so that among the inventions of the undersigned, there is also the artificial heart which oxygenates human blood, which could extend human life by several hundred years. Obviously, together with other parallel inventions in the field of medicine, robotics, artificial intelligence, which are still to be developed. But air and water, which are fundamental, are provided free by Nature and the artificial heart, at least as a project, is provided free by the undersigned, who has not found financiers. I believe that the artificial heart that oxygenates the blood was not financed by the current ruling class because, if it works, it demonstrates that men have made mistakes in the most important inventions for the survival of nature and the human race, just to accumulate money."

I wanted to write this article because the Bargi power plant disaster allowed me to draw new ideas for the hydrology of the future which is still at year zero of its potential. In fact, in addition to those already communicated and ignored by world science, from this publication it emerges that the natural or artificial hydraulic jumps can also be reinforced downhill with the compressed hydroelectric system and the lower pressure expansion tank to bring the water back without energy costs back the water to the upper basin or to other water basins for agricultural and industrial uses, leaving the waterways free to deal with possible flood disasters. This opportunity added to the other solutions already communicated, such as that of submerged compressed hydroelectric for wells which would allow water to be oxygenated without energy costs

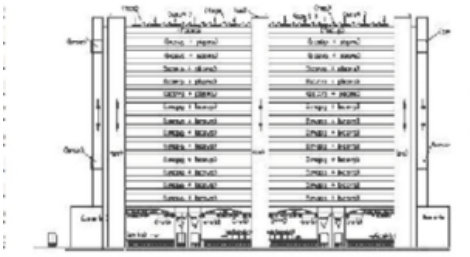
even in aquifers, which as we know are polluted by chemical fertilizers and untreated urban and industrial waste. Let us not forget that the solution studied for the wells which was not realised, due to its particular elongated shape, also made it possible to develop the beautiful artificial heart oxygenating human blood project and the global linear motors which with small dimensions could add together the thrust of Newton and Lorentz which on planet Earth has never been added together in mobile plants that could remain in the atmosphere and in space in three-dimensional directions, always without fuel and nuclear energy. Whose side is world science that has never spent a euro to verify these inventions?

Luigi Antonio Pezone

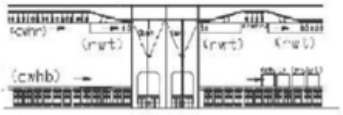


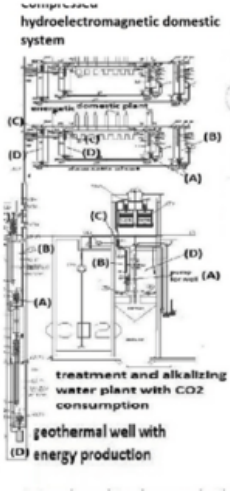


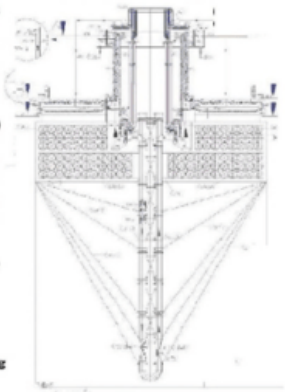
Energy autonomous space container with inter-space dust capture system, internal space survival plants and local displacement vehicle.



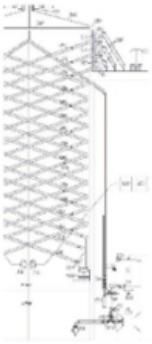
Energy-independent vertical synergistic building with purification plants with superimposed biological ponds and with food crops and automated internal transport system



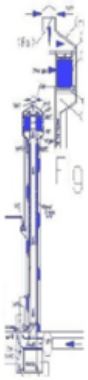




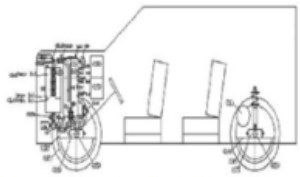
artificial welling with vertical desalination



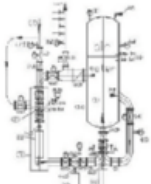
limestone greenhouse with CO2 consumption and alkaline water production.



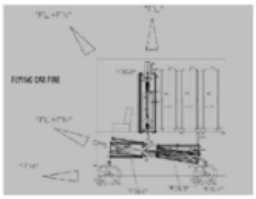
Smoke capture and purification chimney to be combined with limestone greenhouses



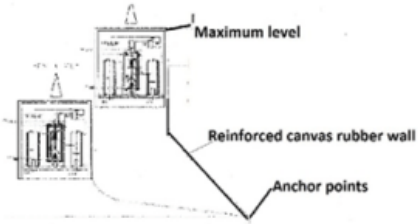
Compressed hydro-electromagnetic car with driving torque applied to the periphery of the wheels



Compressor hydro-electromagnetic current generator with recycling and lifting of condominium waters



Flying fire vehicle with global linear motors, Newton and Lorentz thrusts



Mobile barrier for defense against flooding hydro-electromagnetic compressed with Newton and Lorentz thrust.

COP 28. Science has not understood that planet Earth could be energetically autonomous without fossil fuels and nucleated energy.

https://www. spawhe.eu by luigi antonio pezone